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Consumer BULLETIN

The Original
Consumer Information
Magazine

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1958 CARS

CHEVROLET

FORD

PLYMOUTH

**Record
changers**

**HOW TO PLAN
A NEW KITCHEN**

Men's wrist watches

**Arsenic,
a known cancer-causing agent,
in cigarettes**

**Devices for copying papers
in the office,
school, and home**

**An electric teapot,
a hazardous new appliance
from abroad**



BrewMaster electric teapot



SINCE PUBLICATION of our brief notice in the February BULLETIN about the Japanese-made electric teapot, Consumers' Research has had opportunity to give the device closer examination and testing. The teapot, branded *Electric Brew-Master*, has been rapidly making its appearance throughout the country, and can be purchased at prices ranging from \$1.99 to \$3.50 in cut-rate drugstores, department stores, and other occasional outlets for electrical gadgets; it has even been offered as a premium by a food manufacturer.

The appliance consists of a pale-buff-colored ceramic base of saucer-like shape, a ceramic teapot, and a ceramic lid. The heater, which is of the undesirable "open-element" type, is partly enclosed under a ceramic cover, at the bottom of the teapot. Electric current is supplied to the heater by the contact of two metal spring-loaded pins in the base of the pot which make contact with two exposed metal electrodes on the saucer. The exposed contacts on the "saucer" connect directly to the line cord. There is no switch; current is shut off by removing the pot or turning it on the base so that the contacts on the pot no longer touch those on the base.

The appliance is inherently unsafe, for even though the heating element is "off" with the pot removed, the saucer contacts remain electrically

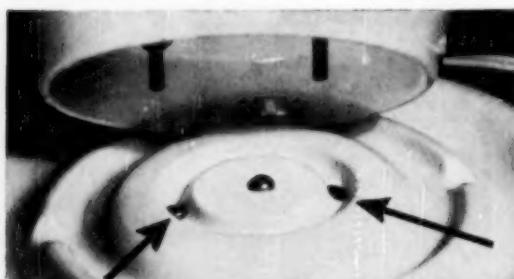
alive and at full line potential so long as the line cord is in the power outlet.

This feature alone is enough to warrant a C rating for the device. There is still a further and very serious element of electrical hazard in the appliance, for with ordinary tap water being heated in the pot enough current flowed from the water to a conducting object immersed in the water (a spoon, for example) to light a small (7-watt) electric lamp bulb. This current was *many times larger* than a safe current limit. The fact that the heater is disconnected by removing the pot from the saucer presents a special hazard to the consumer, who will assume that the appliance is electrically dead, or safe. Many would undoubtedly neglect to remove the line cord from the wall, and the prying fingers of small children making contact with one or both of the live points in the base might be the cause of a tragedy.

The pot boiled three cups of cold (55° F) water in four minutes and drew 1150 watts of electrical power. The water, which was heated by direct contact with the heating element, had a strong metallic taste; we believe it would be unsafe to drink continually or often hot water that had been heated in direct contact with the heating element. Heating elements are normally made of nickel-chromium alloys, and both these metals are toxic and should not be consumed even in the smallest quantities (see our article on "Stainless-steel cooking utensils" in the October 1957 CONSUMER BULLETIN).

The teapot we have reported here is an example of a number of items, often foreign imports, which are poorly engineered but sell well because of the low price or some interesting novelty feature. (See our discussion of attractive and convenient immersion heaters in the October 1957 BULLETIN.) The Japanese government and industries should take seriously the matter of preventing the exportation of items such as the one here described, for if such low standards of electrical design apply to future imports from Japan, that country's industry is likely to suffer

(Continued on page 32)



Even though the heating element in the pot is disconnected when the pot is removed from the base, there are exposed contacts on the base (see arrows); these are electrically alive and a source of danger as long as the line cord is in its socket.

The Consumers' Observation Post

AS AMERICAN AUTOMOBILES increase in size and width, tax officials and traffic experts are wrestling with the mounting problem of space for the monsters. One suggestion that several concerned with the problem have advocated is a license fee based on vehicle length. Professor C. Lowell Harriss of Columbia University spells out dollars and cents criteria for licensing cars on a vehicle length basis. He suggests an annual fee of \$1 for each inch between 180 and 185 inches, \$3 per inch for the 185 to 190 bracket, and \$10 an inch over 195. As an alternative to taxing length, the professor suggests a levy based on length and width combined. The city controller of Chicago, Carl H. Chatters, also thinks the present Chicago system of using horsepower as a basis for taxing registered vehicles is outdated and notes that cutting a foot off the average new car would release an estimated 800 miles of street space. One argument advanced in support of some new system of taxation is that, as the cars continue to grow longer, municipalities will be obliged to levy additional tax funds to bring parking and highway facilities up to the requirements of the longer vehicles.

* * *

COMMERCIAL MIXES for cakes, cookies, biscuits, and piecrusts save time but not money. That was the conclusion of a study at the Minnesota Agricultural Experiment Station. It was estimated that the commercial mixes cost one fifth to three quarters more than those made from individual ingredients or home mixes. The time saved in preparation, however, ranged from one fourth to one half of that needed for homemade cakes, cookies, biscuits, and piecrust.

* * *

ITINERANT SEPTIC TANK CLEANERS are overcharging customers for inadequate service in some sections of the country. The St. Louis Better Business Bureau points out that the problem is increasing as people move to the country who are unfamiliar with the care and maintenance of septic tanks. Garbage disposal devices are also creating a problem in overloading septic tanks, and such tanks should be 50 percent larger than is normally required when such a unit is installed. The St. Louis Bureau reports a number of cases where an itinerant septic tank cleaner offered to do a particular job at 1-1/4 cents per pound, and ran the bill up to a very considerable sum. In one case, when the homeowner checked on the job to find it only half finished, she had already incurred a charge of \$114. She stopped the work at that point and called a local, well-established concern which gave her a price of \$55 for the complete job. In another case, a restaurant owner was presented with a bill for \$652 for cleaning a septic tank that had been operating only nine months; belated investigation indicated that several companies would have done the job for \$200. The Bureau points out that some septic tanks may operate for 15 years without cleaning or service, while another may require yearly cleaning. It is advisable to get competing bids before authorizing a job of this type, if the cost is to be substantial.

* * *

THE PERSPICACITY OF THE YOUNGER GENERATION is a factor that needs to be taken into account by the Madison Avenue advertising copywriters. According to Food Field Reporter, members of a youth forum discussing food advertising showed great skepticism about the value of premiums, declared that they got recipes from their mothers rather than from magazines, and they took a dim view of the techniques for making a package size look bigger than its contents. The journal's editor noted that one of the adults present commented that a lot of persuading and improved sales techniques were obviously required to influence teenagers these days.

REGULAR TOOTH PASTE rather than one of the special-purpose varieties was the type given top preference in a recent magazine survey. Nearly 58 percent of 1098 women participating in a Fawcett Publications' survey reported that they used regular tooth paste, contrasted with nearly 17 percent using fluoride-containing pastes, 14 percent preferring the chlorophyll type, and 8 percent anti-enzyme tooth pastes. Some respondents, however, indicated that they used two or more types.

* * *

AGGRESSIVE SALES TACTICS on the part of employees of the Holland Furnace Company have been the subject of severe criticism by Better Business Bureaus for some time. The techniques used have included: posing as government or public utility inspectors to gain entry into homes, dismantling furnaces without owners' permission, refusing to reassemble furnaces and claiming that to do so would involve danger of fire, gas, and explosion, and representing that perfectly good furnaces have served their useful life. In November 1957, a Federal Trade Commission examiner ordered the company to stop using scare tactics, misrepresentations and duress in selling its furnaces, heating equipment, and parts. Although the company had officially disavowed giving approval to such tactics, its salesmen were reported as using them in many parts of the country. In Toledo, Ohio, the Blade ran a series of articles exposing the tactics used by Holland Furnace salesmen and recommended that a homeowner should not admit anyone claiming to be a heating inspector unless he had credentials establishing his claim. The newspaper further suggested that homeowners should not accept any offer for free inspection, adjustment, or servicing of a heating system without checking with the local Better Business Bureau, Chamber of Commerce, or their local fuel dealer. The season is approaching for putting the furnace to bed for the summer, when activities of this kind may again be a problem in certain localities.

* * *

THE RELUCTANT SCHOOL CHILD'S MONDAY MORNING INDISPOSITION may be due to his eating habits over the week end. One CR subscriber points out that, particularly in bad weather, children who hang around the house eating extensively between meals while watching television are likely to have their digestive systems somewhat out of whack by Monday morning and get off to a bad start for the week. An excess of cookies, sweets, and other carbohydrates, and lack of exercise can cause trouble even for a healthy child.

* * *

ONE OF THE NEW DEODORANT FORMULAS produces an unpleasant allergic reaction in some users. Studies by Drs. Walter B. Shelley and Harry J. Hurley, University of Pennsylvania, have indicated that deodorants containing a compound of zirconium have caused granulomas to form on the skin. These are masses of closely packed cells that form nodules and are somewhat unsightly. Experiments with healthy volunteers indicated that the reaction was due to allergic hypersensitivity to the zirconium. None of the other ingredients in the deodorant tested brought on the reaction. Consumers who may be susceptible to zirconium will do well to read carefully the label of any deodorant they purchase.

* * *

COTTAGE CHEESE is an increasingly popular food, particularly among those dieting to reduce, because of its low fat content. Professor J. C. Boyd of the University of Idaho has pointed out that the dairy industry needs to work for improving sanitation in the manufacture of this product. The milk from which it is made not only needs adequate pasteurization but careful handling in post-pasteurization operations where sources of contamination may result in an off-flavor, unsightly appearance, and the development of coliform bacteria. Professor Boyd points out that good sanitation, proper pH control, and good refrigeration are essential for cottage cheese if it is to remain in satisfactory condition in the store before the consumer buys it.

(The continuation of this section is on page 35)

Consumer Bulletin

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Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3 at the end of a listing indicates relative price, 1 being low, 3 high. Where the 1, 2, 3 price ratings are given, brands in the 1, or least expensive group, are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

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Cover photograph of record changer, Rockbar Corp.

Automatic record changers



Garrard RC-28
Triumph II



Collaro RC 440
Coronation

EVERYONE WHO HAS RECORDS and wishes to play them with the highest of fidelity and with minimum risk of damage should use one of the single-play turntables with a separate high-quality arm and pickup cartridge, rather than an automatic record changer. The record changer is convenient where the music to be played is not of high quality and the records are inexpensive, but since a changer contributes to more rapid wear of records, introduces background noise into the sound, and in some cases does not give true or even pitch to the sound, even the best of the changers is likely to be avoided by people who like their music pure and undefiled.

It must be conceded, however, that there are a few record changers that are nearly good enough for high-fidelity reproduction and very convenient for those who want the advantage of a long period of record playing with no need for attention to the equipment. A first-class changer should have performance at least approximating that of a good turntable. The turntable of the changer should rotate at the correct speed and should maintain this speed with a full load of records as well as with a single record. If speed is too slow or too fast, the pitch of the recorded

music will be wrong. Many changers have small variations in speed (wow) so that there is an uncertain wavering of the pitch of a steady tone. A changer will have rumble (mechanical noise generated in the rotating parts) to a greater extent than a single-play turntable, and this rumble will appear at the speaker as a low-frequency "growl." (For this reason it would be unwise to purchase a record changer for use with any top-quality wide-range speaker system which effectively reproduces very low frequency sounds.) However, the amount of rumble with a good changer should be very small.

Any record-playing machine that is to be used with a magnetic or variable-reluctance pickup cartridge should be driven by an induction motor having at least four poles. Such a motor tends to minimize the hum that may be picked up and reproduced by the pickup cartridge, and it favors better torque (driving power) and better speed regulation. With some magnetic cartridges, a two-pole motor will almost certainly produce objectionable hum.

On the matter of speeds, most changers provide for four: $16\frac{2}{3}$, $33\frac{1}{3}$, 45, and 78 rpm. However, very few 78 rpm. records are being purchased today, and only a very limited selection of $16\frac{2}{3}$ rpm. material is available. The vast majority of records are for $33\frac{1}{3}$ and 45 rpm. playing. It is the industry's practice to record serious music for high-fidelity reproduction at $33\frac{1}{3}$ rpm. ("LP" records).

CR confined its tests to $33\frac{1}{3}$ and 45 rpm. speeds with a somewhat briefer examination of perform-

ance at 78 rpm. (for the benefit of those who have extensive libraries of old 78 rpm. records). CR recommends that the large spindle be used with the 45 rpm. records rather than the "knockout disks" that can be purchased for insertion in the large center holes of the 45 rpm. records.

Most changers today use one of two systems of changing records. The spindle-drop system utilizes a cam or lever on the center spindle to drop one record at a time. A ballast arm across the top of the record stack functions to keep the records level and provides the pressure needed to drop the record. This system generally causes greater wear of the center hole of the record; a worn hole can add to wow and groove jumping by the stylus.

The other system is the push-off mechanism which applies a push to the edge of the bottom record of a stack, causing the record to slide down the center spindle to the turntable.

A changer should be mounted with its turntable level and with the pickup cartridge carefully installed according to instructions to assure the best possible tracking.

Work by Consumers' Research in this field indicates that only the *Garrard RC-88*, *RC-98*, and *Collaro* can be recommended as affording a really close approximation to high-fidelity reproduction. The other changers will serve, however, for ordinary radio phonograph applications. Prices are so-called "net," that is, the price asked by big radio parts distributors.

A. Recommended

Collaro RC 440, Coronation (Distributed by Rockbar Corp., 650 Halstead Ave., Mamaroneek, N.Y.) \$40.67, less pickup cartridge.

Description: Four-speed changer, 12 x 13½ in.; four-pole motor; plastic plug-in head for pickup cartridge. Plastic tone arm. Spindle-drop mechanism with record ballast arm. Permits random intermixing of all sizes of records of same speed. 45 rpm. spindle available at \$3.23. Controls: speed-automatic-manual, and start-stop-reject. Can be used as a manual player.

Performance: Speed regulation is satisfactory. Four-pole motor with excellent torque. Dropped records quietly; polished spindle, which would cause low wear on record center holes. 8½-in. tone arm gave good performance. Wow, flutter, and rumble, very low. Changer shuts itself off at the end of the last record. Judged a well-made changer. 3

Garrard RC-88, Triumph II (Garrard Sales Corp., 80 Shore Rd., Port Washington, N.Y.) \$53.41, less cartridge.

Description: Four-speed changer, 15½ x 13½ in.; four-pole motor; two plastic plug-in heads for use of separate pickup cartridges; tone arm made of aluminum. Push-off type change mechanism. 45 rpm. spindle available at an extra charge of \$3.43. This *Garrard* does not play

"intermixed" records. Pusher platform must be set for 7-, 10-, and 12-in. records. Controls: start-stop-reject switch, speed selector, automatic-manual switch. This changer can be used as a manual turntable with a center spindle (supplied).

Performance: Speed satisfactory on three speeds. Four-pole motor with excellent torque on turntable. Dropped records quietly; spindle, which had chrome finish, would cause minimum wear on record center hole. 7¾-in. tone arm gave good performance. Wow and flutter and rumble were very low. Changer shuts itself off at end of last record. Judged a well-made changer with better-than-average performance. 3

Garrard RC-98, Crown II (Garrard Sales Corp.) \$66.15, including 45 rpm. automatic spindle but less pickup cartridge. This changer is a de luxe version of the *Garrard RC-88 Triumph II* and is essentially the same, except that it has a control to permit the user to vary each selected speed to adjust the pitch on reproduced music to the exact point desired. 3

B. Intermediate

V-M Super Fidelis 1200 A (V-M Corp., Benton Harbor, Mich.) \$37.20, including turnover ceramic pickup cartridge.

Description: Four-speed changer, 12½ x 14 in.; two-pole motor; tone arm made of aluminum. Spindle-drop mechanism with record ballast arm. Permits random intermixing of all sizes of records of the same speed. Automatic spindle for 45 rpm. records available at \$1.92. Controls: on-off-reject, speed.

Performance: Speed regulation is satisfactory. The two-pole motor became very hot during tests (undesirable). Wow and flutter were low, but some rumble was noticeable. Changer shuts itself off after the last record is played. Because of its two-pole motor, this changer is best not used with a magnetic cartridge. 2

Webcor Magic-Mind BR 1841-1 (Webcor, 5610 W. Bloomingdale Ave., Chicago) \$33.45, including turnover ceramic cartridge.

Description: Four-speed changer, 13½ x 14 in.; two-pole motor; tone arm made of aluminum. Spindle-drop mechanism with ballast arm. This changer will automatically select the proper speed and play intermixed 7-, 10-, and 12-in. records of 45 and 33½ rpm. Automatic spindle for 45 rpm. records available at \$2.94. One control, for speed, which when depressed will start the machine or reject the record which is playing.

Performance: Speed regulation, satisfactory. Two-pole motor had good torque. Some wow present, and rumble was noticeable. Changer shuts itself off at the end of the last record. Because of the use of a two-pole motor, this changer is best not used with a magnetic cartridge. 2

Garrard RC-121, Renown (Garrard Sales Corp.) \$41.65, less pickup cartridge.

Description: Four-speed changer, 14½ x 13 in.; four-pole motor; plastic plug-in head for pickup cartridge; tone arm made of aluminum. Spindle-drop mechanism with record ballast arm. Permits intermix of all sizes of records of same speed if stacked in predetermined order of record size. Automatic spindle for 45 rpm.

records available at \$3.43. Controls: speed selector, start-stop-reject, auto-manual.

Performance: Speed regulation is satisfactory. Four-pole motor has good torque. Wow and flutter were low, but some rumble was noticeable. Dropped records quietly. Tone arm gave good tracking. Changer shuts itself off

after the last record. Well designed but not assembled with the high grade of workmanship usually associated with *Garrard* changers. A new model, the *RC-121 Renown II*, selling at the same price has a new tone arm and a new control system and has true random intermix of 10- and 12-inch records of the same speed. It was introduced too late for inclusion in this report. 3

Letters

Are old television receivers better than the new ones?

I am interested in purchasing a new television receiver.

The repairmen keep telling me that the old sets are the best. I hope that soon you will have the answer to this question in your Bulletin.

Mrs. W.C.J., Chula Vista, California

► We have had several letters from subscribers of late reporting that servicemen had informed them that television receivers that are several years old are better than the newest ones.

The market does not reflect that view, and actually has a low opinion of sets of the age referred to, say around 1951, for such sets have a low value to a dealer who resells them to a customer. Secondhand retail value to a customer of a set of that age in a TV dealer's store is about \$30 to \$50, and in our opinion that is a fair reflection of its value compared to new receivers of today's output.

We think the reported opinion of servicemen favorable to sets of previous years would apply only to very recent models, not earlier than 1954 or 1955. It has been our experience that receiver design in the 1954 to 1956 period was about at its peak, and we would not agree that a receiver made in 1950, 1951, or 1952, for example, would be preferable to one built three or four years later.

The later models are well designed and built, and it must be remembered that a television receiver that is six to eight years old must be regarded as nearing the end of its expected useful life without servicing, unless, of course, one is willing to pay for considerable repair work to keep it operating properly.

In our opinion, few television receivers five years old or older would be worth an outlay of more than \$30 or \$40 or so, to put them into good operating condition.

SOMETIMES letters from our readers raise questions which we think may be of interest to a great many others besides the inquirer. We hope to run such letters occasionally, as space permits.

Special spark plugs

I am enclosing the advertising circular for you to read about the spark plugs mentioned therein.

I would like to see an article in Consumer Bulletin some time about those spark plugs, stating whether the plugs are as good as stated or if they are just another product that is sold to make a fast dollar with no special benefit to the public.

A.P., LaCrosse, Wisconsin

► On any modern car, we would not think of using any plug except that which is recommended and sold by the maker and his franchised dealers. The problem of spark plug design is much more complicated and involves much more technical control than the average reader would suppose, and it is unwise to trust a newcomer to the field or an outsider until the performance of his product has been established by tests by the manufacturer of the car, and is then recommended in the instruction book for the car.

You ask whether the plugs are as good as the seller claims. Very few things are as good as the seller claims, particularly in the field of automotive specialties, where the claims made are typically the results of the imagination of the advertising copy writer and often have little to do with any actual performance as measured in the laboratory. Testimonials are quite irrelevant, as we have pointed out in our discussions of battery additives and other subjects.

Telescopes for amateur astronomers

Can you give me some information on telescopes suitable for an amateur astronomer?

G.S.A., Maryland

► We have evaluated only one telescope suitable for use by the serious amateur astronomer, the *Sky-Scope* (see May 1951 Bulletin). As this is a specialized hobby subject of interest only to a relatively small number of our readers, it is not likely that we will report on other makes.

There are many organizations of amateur astronomers, and among their members are likely to be found owners of the various instruments who can give firsthand reports about their performance.

A magazine which may interest you is "Sky and Telescope," published by Sky Publishing Corporation, Harvard College Observatory, Cambridge 38, Mass.

Although we cannot advise you specifically about the various makes of telescopes, we can offer three general suggestions that may be helpful:

1. A telescope, as any optical device, is basically dependent for good performance on the quality of its optics—lenses, and sometimes mirrors. These parts are hand-finished, and quality can vary widely from instrument to instrument of the same brand. A trial period with privilege of return is thus very important, and the instrument should be tested by an experienced person.

2. All telescopes require skill in adjustment and use, but this is much more important with reflecting instruments. Reflectors in general give more light-gathering power per dollar of cost, but require greater skill and care in use than refractors.

3. The mounting of a telescope is an important matter that requires just as careful consideration as the optical qualities of the instrument.

Men's wrist watches

THE HEART of the watch, its balance wheel, makes five swings or oscillations every second for a total of 432,000 motions in 24 hours; in a year's time, running every day, this amounts to over 157 million forward-and-backward motions. At the same time it is doing this work, it absorbs considerable punishment and very often a good deal of abuse including sharp accelerations and changes of position, temperature, and barometric pressure. For this reason, it is important to give greatest consideration to the movement when selecting a watch for timekeeping and less to the case, style, and accessories. High price and fine appearance are no guarantee that the watch will be a good one. Advertising or personal salesmanship of the dealer will very commonly emphasize such appealing features as attractive case, shockproof and waterproof construction, automatic wind, the number of jewels. Unfortunately, none of these or any combination of them can in themselves assure the purchaser a good timepiece.

Jewels are used in watches to prevent undue wear of moving parts and, for all but special-purpose watches, 17 jewels—either synthetic or semiprecious stones—are adequate if they are placed where they belong in the movement. Any claim that more than 17 make a better watch and worth a higher price is likely to be just sales talk. (The jewels themselves are very inexpensive; indeed, they are sold in quantities at 2 to 5 cents each.) Four jewels for the two ends of the balance staff, one roller jewel on the balance

itself (a total of seven), and two pallet stones in the lever through which the power is sent from the escape wheel to the balance wheel are the most important jewels in any watch. Steel pins on the pallet are very common and go within an inferior watch, regardless of whether there are jewels elsewhere in the movement.

It is rather common for dealers, and more particularly department stores, to go in for extensive advertising with a strong price appeal on a very poor, almost worthless watch in terms that should be applied only to fairly good or good timepieces. Thus such terms as "engineered to rigid Swiss precision standards," "electronically time checked," "made by the finest Swiss craftsmen," can be completely ignored as a basis for purchase, even when used in the advertising of reputable department stores or other well-known merchants. A claim of a "jeweled movement" is meaningless, too, for some jeweled movements *contain only one jewel*, put in solely to permit the watch to be advertised as "jeweled."

The case of a watch, if of gold or platinum, makes up a large part of the price; it does not contribute to good timekeeping qualities. Many consumers make the mistake of supposing that an expensive solid gold or platinum case provides insurance that the movement in the case will be of fine quality. A very good watch can be bought in a 14-carat gold case at a price considerably below one in an 18-carat case, will look just as good, and will wear better. Watches with stainless-steel cases (which are especially suited for waterproof watches) sell for far less, even though the cost of production is only slightly less. The price difference between the watch in a solid gold case and a watch in a stainless-steel case may be as much as \$150, but the value of the gold in the solid gold case may be no more than perhaps \$15. The point to be noted is that the solid gold case adds greatly to the price, but only slightly to the manufacturer's cost. In general, a round case is the best shape for convenience and readability.

Such terms as shockproof and waterproof are very loosely used in the trade. No watch is

Everything a man would wish in a new watch. This imported automatic watch gives ideal self-winding performance with the natural movement of the arm. A handsome design in non-tarnishing gold-colored metal. Modern dial, sweep second hand, leather-backed genuine alligator band. Anti-magnetic, shock resistant, water resistant, guaranteed. \$16.89

At the left is a typical department store watch advertisement. In today's advertising, low-priced watches are made to sound, in print, as good as well-known makes. Note the failure to say anything about timekeeping qualities, how many jewels the watch has, or what the material of the case is, so that one might judge how long it might keep its good appearance. Low-priced watches, particularly, are best bought without automatic wind and without sweep second hand.

Watch, make or brand	Price \$	No. of jewels	Wrist band	Features and comments
A. Recommended				
CROTON				
Nivada Grenchen	69.50	17	leather	Self-winding.
GIRARD PERREGAUX				
Sea Hawk	50.00	17	leather	
Girard Perregaux	75.00	17	leather	Self-winding.
Gyromatic	79.50	17	leather	Self-winding.
Gyromatic	89.50	17	leather	Self-winding.
Gyromatic	160.00	17	leather	Self-winding.
LONGINES				
President Grant	135.00	17	leather	
Harding	140.00	17	leather	Hard to wind. Irregular running on several tests.
Hopkins	135.00	17	leather	Self-winding.
Hopkins	160.00	17	leather	Self-winding.
Warren	160.00	17	leather	
Coronation	225.00	17	leather	Five small diamonds in the dial.
WADSWORTH				
Wadsworth	29.95	17	leather	
Fargo	37.50	17	leather	
B. Intermediate				
BENRUS				
VL Champion	35.75	17	expansion	
Sky Raider	59.50	17	expansion	Self-winding.
Golden Sportsman	100.00	17	leather	
BULOVA				
Senator — A	35.75	17	expansion	
President — A	49.50	21	leather	
Phantom — A	49.50	17	expansion	
Phantom — D	59.50	17	expansion	
Excellency	67.50	21	leather	
Carlton	71.50	21	expansion	Irregular performance at times.
Bulova	100.00	17	expansion	Irregular performance at times.
Bulova	135.00	21	leather	

really shockproof; at best it is only partially protected against jolts and jars. Claims that a watch is non-magnetic are of no great importance unless the watch is to be used by laboratory and industrial workers. In any event, most watches today are made with an anti-magnetic balance and hairspring.

Self-winding watches (also called automatic) are generally serviceable and reliable nowadays, but the prospective buyer should realize that they

are likely to require more frequent repairs and cleaning—at a higher cost in each case than with a conventional watch. Within the last year or so some self-winding watches have been produced at astonishingly low prices in the range of \$15 or thereabouts. It is best to avoid all self-winding watches offered at bargain prices. Even some fairly expensive automatic-winding watches have been quite unsatisfactory and required costly servicing. A watch of this type should, therefore,

Watch, make or brand	Price \$	No. of jewels	Wrist band	Features and comments
B. Intermediate (Continued)				
ELGIN				
Sinclair	33.75	17	leather	
Elgin 19	65.00	19	leather	
Lakeshore	79.50	17	leather	
Shockmaster	79.50	19	expansion	Self-winding. Irregular performance.
GRUEN				
Dewey	49.75	17	expansion	
Veri-Thin Squire	65.00	21	leather	Self-winding.
Autowind Scientist	71.50	17	expansion	Self-winding.
Sparta	71.50	17	leather	
Autowind Farragut	82.50	17	leather	Self-winding.
Windsor	100.00	17	leather	
HAMILTON				
Clive	47.50	17	expansion	
Eaton	60.50	17	leather	
Langdon	66.50	17	leather	
Baxter	69.50	17	leather	
Powell	69.50	17	expansion	
Stormking V	69.50	18	leather	
Grover "B"	75.00	17	leather	Masonic dial.
Sedgeman	150.00	18	suede	Irregular performance.
LE COULTRE				
Automatic	71.50	17	leather	Self-winding with winding indicator.
OMEGA				
Automatic	79.50	17	leather	Self-winding.
Seamaster	155.00	17	leather	Self-winding.
WITTNAUER				
Revue	71.50	17	expansion	
Sloane	71.50	17	expansion	
WYLER				
Wyler	39.95	17	leather	
Gold Shield	79.50	17	leather	

be bought, buy in a well-known and reputable make and from a jeweler of good reputation who will see that, if the self-winding feature gives trouble, the necessary correction will be made without cost to the user.

Price, number of jewels, and other features were not considered in the ratings, which are based on timekeeping performance as determined in the laboratory on several samples of each brand, but information on price, jewels, band, etc., is given

for each watch for the convenience of readers. In a sampling of 13 brands, CR found, in a number of watches, a rather wide range of timekeeping properties between watches of even a single brand. None of the brands were so poor, however, as to warrant a *C-Not-Recommended* rating; only four brands gave sufficiently uniform performance to warrant an *A-Recommended* rating. Watches not shown as self-winding are wound in the usual manner.

How to plan a new kitchen

IN 1958, if the present trend continues, many American householders will be remodeling their kitchens. This remodeling undoubtedly will be stimulated by advertising which suggests that kitchens ten or even five years old are hopelessly out of date and badly in need of a face-lifting. Remodeling may strike a homeowner as a good idea despite the fact that the change may involve the purchase of two or three major appliances and also new cabinets and other furnishings. Even a modest improvement of the kitchen is likely to require ripping up the old linoleum and replacing it, also rewiring the kitchen, and possibly new plumbing. The minimum expenditure will likely approximate the price of a new family car, and in a good many cases will need to be financed in much the same way.

All of this may present a somewhat discouraging picture, especially if one also considers the disadvantage of not having a workable and convenient kitchen during the remodeling process, to say nothing of having workmen in and out of the house for several weeks or even months. Nevertheless, the kitchen ranks with the bathroom in top importance when it comes to selling the house, and thus kitchen alterations can be justified in part as a capital improvement that will possibly enhance greatly the sale value of a house. The family may be tired of the old kitchen anyway.

Major appliances come first

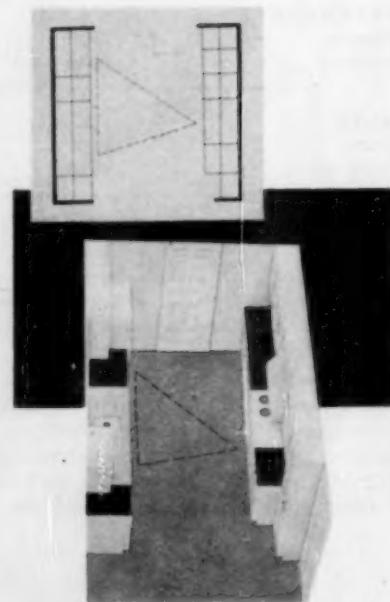
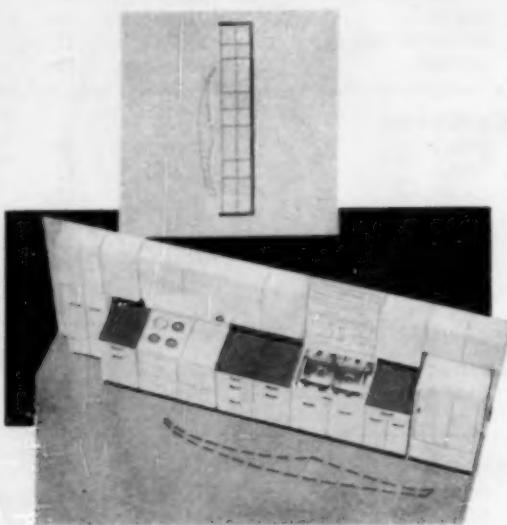
The consumer who wants to get the most for his money will buy his kitchen as carefully as he buys his car. One real trouble is that with a kitchen he will have more things to consider. In the selection of the new appliances, articles in CONSUMER BULLETIN will be of the greatest help. What to look for, what to avoid, and what brands to buy is information that is difficult, if not impossible, to get reliably from other sources. Probably the first step to take in planning a kitchen is to decide on the appliances that are to be used and then which ones must be bought new. From this list one can get an approximate idea of the cost of

The work done in a kitchen has principally to do with food: its storage and preparation, cooking and serving, and finally cleaning the dishes, pots and pans. Nowadays it is recommended that a kitchen plan include three work centers designed to take care of these specific jobs. Sometimes, of course, counter space can be used for two or three purposes. Four basic kitchen layouts are shown on this page and on page 13.

Illustrations from "Planning Your Kitchen Layout," by Berger Div., Republic Steel Corp.

the new kitchen. The price of the appliances has been estimated as roughly one third the cost of the whole modernizing job.

Now to choose the brands and sizes of the appliances. This is especially important if built-in appliances are to be used. Cabinets will have to be purchased to go with them, and the space re-



quirements given by the manufacturers of the appliances rather than the makers of the cabinets should be followed. Otherwise you may find yourself in the sad state of one of our readers who has built-in surface burners and cannot remove the drip pans for cleaning because the cabinet is too small and its doors improperly located.

Kitchen cabinets

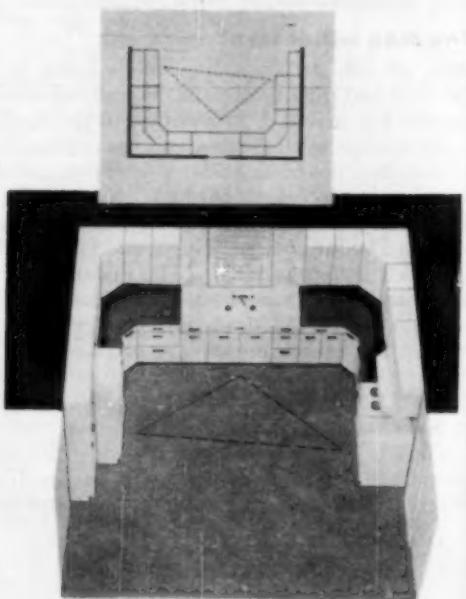
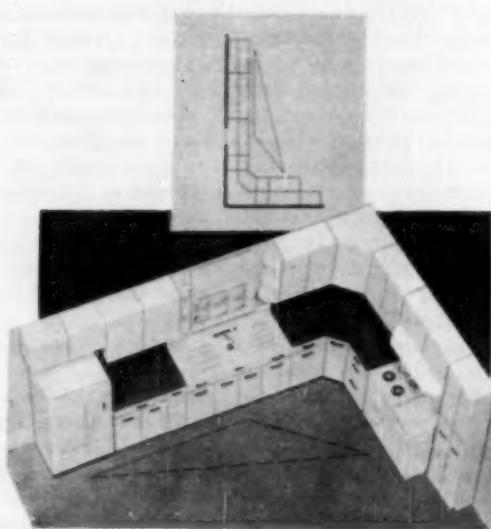
The second step to take is to decide on the kind of cabinets that you want, whether wood or steel. You will find both kinds available at various prices, ranging from about \$35 to \$85 for base or

floor cabinets 24 inches wide with one drawer and from \$22 to \$50 for wall cabinets 24 inches wide and approximately 30 inches high.

Steel cabinets are noisier than wooden ones but well-made ones are very practical, are available in attractive colors, and come in shapes that will fit into problem spaces. Half-round and quarter-round-base cabinets, for example, are available as stock cabinets in steel, but only custom made in wood. Some steel cabinets are made with wood doors. Wood cabinets are available in stock sizes and can also be custom made.

All things being equal, it is probably better to buy cabinets from stock sizes. Usually they are available in 3-inch increments; for example, 15, 18, 21, and 24 inches wide. (A few makers have cabinet widths based on 4-inch intervals.) Wall cabinets come in widths corresponding to those of the base cabinets. It is pretty hard to find any kitchen space that will not lend itself to a suitable arrangement of cabinets in available sizes and shapes. In the long run it may save time and annoyance, if nothing else, to have the cabinets delivered from stock with only the problem of installation remaining. Base cabinets are usually 34½ inches high without the counter top. Wall cabinets, 12 to 13 inches deep, come in two heights, 18 inches for use over sinks and ranges and 30 inches for other places. Wall cabinets are usually installed 15 to 16 inches above the base cabinets to provide sufficient height for an electric mixer, a juicer, and other appliances that may logically be used and stored on the counter top beneath them. Any space remaining above the cabinets is usually filled in by a dropped ceiling or a soffit. Sometimes even this space is utilized as storage space. The usual cabinet height of 36 inches up to the counter top will be satisfactory for most women. (Women of unusually small stature will wish to look into the availability of lower ones.) Women shorter than 5 feet 1½ inches may like to have some pull-out boards to afford a lower working surface.

The manufacturer of any built-in appliance that you are getting and the maker of any cabinets you are considering will be able to provide you with some general information on the four usual types of kitchen arrangements. Appliance dealers will likely have plans readily available in booklets or they may even provide a special advisory service free. An appliance dealer who



References to articles in Consumers' Research BULLETINS: Built-in gas ovens and surface units, March and April '57 (40c each); Built-in kitchens, Aug. '55 (40c); Counter tops, May '54 (50c); Dishwashers, Feb. '58 (40c); Freezers, Jan. '57 (40c), June '56 (40c), Aug. '54 (50c); Gas ranges, Nov. '56 (40c); Linoleum, Nov. '53 (50c); Refrigerators, Aug. '56 (40c); Refrigerator-freezer combinations, Nov. and Oct. '56 (40c each); Vinyl floor coverings, Nov. '54 (50c).

works out a plan for you will usually make no extra charge beyond the price of the appliances and cabinets he sells you. Planning is likely to take even an experienced person five hours, and the service might well be worth it. The homemaker who wants to make his own plan at least initially will find it useful to get some booklets on the subject. A series available from the Small Homes Council of the University of Illinois is a standard reference for kitchen planning and much of the research reported in the Council's booklets is used as background for other publications. For 60 cents you can get all four:

- C 5.31 Cabinet Space for the Kitchen*
- C 5.32 Kitchen Planning Standards*
- C 5.33 Separate Ovens*
- C 5.4 Laundry Areas*

The bulletins suggest minimum counter space for various functions as well as giving suggestions about the distances between work centers and the multiple use of different areas. Minimum amounts suggested for counter space for various kinds of kitchen work, for example, are:

- a. 36 inches counter length at some point for mixing and food preparation.
- b. 24 inches of counter length beside or near the range for setting out serving dishes or dinner plates.
- c. 15 inches beside the refrigerator for setting out articles taken from it.
- d. 36 inches to the right of the sink for stacking dishes.
- e. 30 inches to the left of the sink for draining and drying of dishes.

Counter tops

Nowadays it is not at all unusual to find several types of counter tops in one kitchen. A good grade laminated plastic top is likely to be the first choice among homemakers. These laminated hard plastics, which are rather rigid hard sheets (not the flexible vinyl plastics that are sold in rolls or tiles) are sold under the brand names of *Corlex*, *Formica*, *Micarta*, *Parkwood*, *Panelyte*, and *Textolite*. They are resistant to hot water, fruit juice, grease, alcohol, and most household chemicals and are therefore most likely to withstand the kinds of use which would affect their durability, appearance, and the ease with which they may be kept clean. They are somewhat noisy and their surfaces will likely buckle and warp if a very hot vessel such as a skillet containing hot grease is set on them.

Many women will want a small section of a counter in wood, regardless of the other surfaces

How much will remodeling a kitchen cost?

It *can* cost you up to \$20,000, according to one maker of kitchen cabinets. On the other hand, \$500 will do a small job of kitchen improvement. One trade journal estimates that modernizing an existing kitchen will run anywhere from \$1800 to \$2200. Homemakers who are willing and able to install the cabinets themselves can save as much as a thousand dollars. (The installation of electrical wiring or gas piping, of course, calls for expert, properly licensed workmen.)

used. How durable a wood top will be depends in part on the finish and the care used in sealing the wood. The treatment that any counter top surface receives in use and in cleaning will, of course, have a great deal to do with the service it will give. (Avoid harsh abrasives—such as scouring powder—on all kinds of surfaces, particularly laminated plastics.) Consumers' Research does not recommend the use of stainless-steel or other metal counter tops. Electric appliances are sure to be used on them, and if any of these have or develop a shock hazard with use or abuse or accident, the danger of injury will be very greatly increased if the appliance is used on a metal surface (or even a non-metal surface equipped with a metal rim or edging).

Estimates collected by researchers at Ohio State University in 1956 indicated that on counter top materials the cost of the material alone ran 50 to 75 percent of the total installed cost. Pressed wood was the least expensive per square foot. Linoleum and vinyl were next, with laminated plastic, ceramic tile, hardwood, and stainless steel being increasingly more costly, in that order.

How long will it take?

Once all the decisions have been made about the kind and quality of cabinets and the kind of counter top material, in addition to the location of the various work centers, and the appliances to be installed, the householder is likely to feel that the planning job is all finished. Not so. Don't forget the plumbing and the wiring. Both jobs may involve far greater changes and expense than had been first considered. The installation of a dishwasher, for example, may require installing new hot water and drain pipes. The wiring of built-in appliances presents so many difficulties that at least one appliance manufacturer has urged cabinetmakers to provide a raceway for the wiring to make the whole thing simpler.

There is a National Electrical Code which likely covers the installation, depending on local ordinances. To make the matter more complicated,

interpretation of the code varies from locality to locality, and if the work does not suit the inspector, there may be no adequate explanation of the reason, in some cases. This is a headache for appliance manufacturers but can present very real problems for the householder, too. All this adds up to allowing plenty of time for the job to be done, far more time than you might think reasonable. It may take as long as three months to get the cabinets if you happen to order some sizes that your dealer does not have in stock, and longer still if an error is made in filling the order. One member of CR's staff waited six months for the completion of a medium-sized kitchen.

Floor coverings

The selection of a suitable floor covering material will likely be the homemaker's final problem. In a kitchen, grease is likely to be spilled or spattered from time to time, and gritty, sandy dirt will be tracked in from outside. Rubber, ordinary asphalt tile, or cork tile should not be used in any area subject to damage from grease and oils. Enamelled (imitation linoleum) floor coverings do not hold up well under the abrasive wear of gritty dirt. If the remodeling job includes a lot of open window space, remember that bright sunlight beating down through the windows may concentrate heat and light sufficiently to damage almost any floor covering and especially to cause shrink-

age that will be noticeable in tiles, squares, or strips. Dark patterns will likely change in color less noticeably than light colors, under prolonged exposure to sunlight. Linoleum is said to be the easiest of all resilient floorings to clean. Vinyl floorings will retain a good gloss for a while, and it is often said that they do not need waxing; nevertheless, it is best to wax them occasionally if gleaming floors are wanted. Linoleums generally show greater resistance to some common household chemicals than do vinyl floor coverings. The approximate prices per square foot of the various kinds of floor coverings are:

Approximate prices per square foot, installed

Printed enamel floor covering	5-10c*
Asphalt tile or linoleum tile	20-45c
Vinyl (sheets)	45-75c
Linoleum, inlaid, light gauge	20-35c
Linoleum, inlaid, standard gauge	35-45c
Cork tile	45-90c
Rubber tile	60-90c
Vinyl-asbestos tile	35-60c
Vinyl tile	70-\$1.30

* Not installed. (This type of floor covering is usually installed by the purchaser.)

The list of manufacturers of cabinets may help the consumer who wishes to do some comparison shopping among the brands made and distributed in his section of the country.

WOOD KITCHEN CABINETS

Aristorama	Aristocrat Kitchens, Inc., New York 59
Beautycraft	Miller Metal Products, Inc., Baltimore 30
Bel-Wood	Bel-Wood Mfg. Co., Ackerman, Miss.
Bilt-Well	Carr, Adams & Collier Co., Dubuque, Iowa
Boro	Boro Wood Products Co., Inc., Bennettville, S.C.
Bronzeglow Birch	H. J. Scheirich Co., Louisville 9
Coppes Napanee	Coppes, Inc., Napanee, Ind.
Curtis	Curtis Companies, Inc., Clinton, Iowa
Del-Mar	Del-Mar Cabinet Co., Inc., Atlanta, Ga.
Dixie-Maid	Dixie Cabinet Co., Morristown, Tenn.
Futura	Precisionware, Inc., Brooklyn, N.Y.
Gregg	Gregg & Son, Inc., Nashua, N.H.
I-XL	I-XL Furniture Co., Chicago 10
Keystone	Keystone Cabinet Co., Littlestown, Pa.
Kitchen Maid	Kitchen Maid Corp., Andovers, Ind.
L-Co	L-Co Cabinet Corp., Shamokin, Pa.
Living Kitchen	Brammer Mfg. Co., Davenport, Ia.
Long-Bell	Long-Bell Div., International Paper Co., Longview, Wash.
McLagan	McLagan Millwork, Corvallis, Oreg.
Mengelwood; Crestwood	Mengel Co., Louisville, Ky.
Morgan	Morgan Co., Oshkosh, Wis.
Mutschler	Mutschler Bros. Co., Napanee, Ind.
Nevamar "Carefree"	Nevamar "Carefree" Kitchens, Odenton, Md.
Picture Kitchens	Henry M. Carr, Inc., Chicago 20
Qualitybilt	Farley & Loetscher Mfg. Co., Dubuque, Iowa
Texboro	Texboro Cabinet Corp., Mineral Wells, Texas
Whitehall	Whitehall Cabinets, Inc., East Rockaway, N.Y.
Wood-hu	Wood-hu Kitchens, Inc., Brockton, Mass.
Wood-Mode	Wood-Metal Industries, Inc., Kreamer, Snyder Co., Pa.
Yorktowne	Colonial Products Co., Dallastown, Pa.

METAL KITCHEN CABINETS

Beautycraft	Miller Metal Products, Inc., Baltimore 30
Beauty Queen	Toledo Desk & Fixture Co., Maumee, Ohio
Crane	Crane Company, Chicago 5
Dimensional	Raygold Industries, Inc., Copiague, N.Y.
Dwyer	Dwyer Products Corp., Michigan City, Ind.
Eljer	Eljer Div., Murray Corp. of America, Pittsburgh 22
General Chef	General Air Conditioning Corp., Los Angeles 23
GE	General Electric Co., Louisville 1, Ky.
Geneva	Geneva Modern Kitchens, Geneva, Ill.
Jamestown	Jamestown Metal Products, Inc., Jamestown, N.Y.
Kelvinator	Kelvinator Div., American Motors Corp., Detroit 32
Oakland	Oakland Foundry Co., Belleville, Ill.
RCA Whirlpool	RCA Whirlpool Corp., St. Joseph, Mich.
Republic Steel	Republic Steel Corp., Berger Mfg. Div., Canton 5, Ohio
Richmond	Richmond Metal Mfg. Corp., Philadelphia 15
St. Charles	St. Charles Mfg. Co., St. Charles, Ill.
Shirley	Shirley Corp., Indianapolis 2
Tracy-American	Tracy Mfg. Co., Div. of Viclad Industries, Inc., Pittsburgh 33
Youngstown	Youngstown Kitchens Div., American-Standard, Warren, Ohio

Beautycraft, Dimensional, Geneva, Oakland, RCA Whirlpool, Richmond, St. Charles, Tracy-American, and Youngstown Kitchens cabinets, although made of metal, are available with wood fronts. The Dimensional brand can also be surfaced with patterns from two lines of plastic laminate.

Shingle stains

THE CONSUMER who may wish to make his own shingle stain should mix together approximately equal volumes of linseed oil, creosote oil, and mineral spirits (painter's naphtha). To this mixture he adds for color a pigment of burnt umber ground in oil, which is stirred slowly into the mixed liquids in the proportion of about one pint of pigment in oil to one gallon of the mixture of linseed oil, creosote oil, and mineral spirits. The umber ground in oil may also contain a small proportion of an extending pigment such as magnesium silicate, although the extending pigment would preferably be omitted. About 5 percent drier may be added if raw linseed oil is used. No drier need be added if boiled oil is used. About one-third pint of liquid paint drier, obtainable at paint stores, should be added for each gallon of raw linseed oil in the mixture. No exact proportion or type of drier is required. The drier is usually a mixture of lead and manganese naphthenates, but other combinations including cobalt naphthenate may be used satisfactorily. There can be considerable latitude in adjustment of the proportions of the various ingredients of a shingle stain. In this respect, stains differ greatly from house paints, for with house paints the proportions of ingredients should be kept very close to the best figure.

The formula given is well adapted to shingles which have become old, weathered, and very absorbent; it should also be satisfactory for new shingles or for wood siding. If bevel siding is to be stained, it is best erected with the rough side rather than the smooth side out.

Where one wants the stain to match a certain paint, the paint may be used to make a shingle stain as follows:

To one gallon of paint add $3\frac{1}{2}$ gallons of thinner (mineral spirits) and $\frac{1}{2}$ gallon of linseed oil.

This amount of oil should not cause glossy areas. If the shingles are weathered badly, use more oil and less mineral spirits. In other words, aim to use all the oil that will go into the wood and not leave glossy areas. The problem of glossy areas is somewhat different with thick house paint, since many modern house paints contain a considerable quantity of bodied oil which does not penetrate wood so readily. It may sometimes be necessary, therefore, to thin house paint with paint thinner and no added oil, for this reason.

Such glossy areas are most likely to appear under the eaves. Mineral spirits, also known as petroleum thinner or turpentine substitute, is a petroleum distillate widely used as a thinner for paints and varnish. It is available as a rule under that name from refiners' outlets, large suppliers of gasoline, kerosene, lubricating oil, etc. It is, of course, like turpentine, highly flammable, and explosive and must be handled under conditions that will prevent any possibility of fire or explosion. Thinning should be done out of doors.

Kerosene or even used crankcase oil has been used in shingle stains as a thinner, but it is advised that no more than a moderate amount of either of these materials should be used.

The Forest Products Laboratory at Madison 5, Wisconsin, has an 8-page mimeographed bulletin on The Preservative Treatment and Staining of Shingles (their number R761) which should be referred to by any consumer who may wish to go into the subject in detail. This bulletin gives also information of value on the selection of shingles for roofs and walls. Single copies are available to inquirers without charge; when copies are ordered in quantity, a reasonable charge is made. Orders should be sent direct to the Forest Products Laboratory.

Locked out?

LOCK ASSEMBLIES on new model cars are more intricate than those on old ones, because of new safety latches, warns the Keystone Automobile Club. On this account locksmiths are experiencing great difficulty in opening new model cars when the key is lost, or locked in the car.

"Here's key to problem," says the Club: "Keep record of key code number in wallet or purse.

Code number allows locksmith to obtain proper blank and cut new key readily. This procedure applies to older cars, too."

If you call your auto club because of lock trouble, give the dispatcher your key code number; it may help greatly to give you the needed service promptly.

CHEVROLET, FORD, AND PLYMOUTH

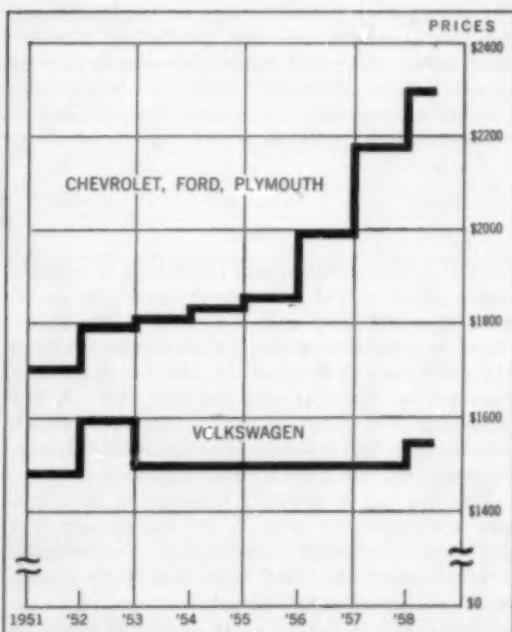


ONE TRADE MAGAZINE recently stated that Americans have proved they love automobiles by purchasing 19 million of them in the last three years. Signs, however, indicate that the honeymoon may be nearing its end, for a sizable and growing number of Americans are transferring their affections to the much lower-priced and more-economical-to-operate foreign cars, and the reasons are obvious.

Prices of American cars have been rapidly increasing since 1951, while the prices of foreign cars have been fairly constant, with only a small increase in prices for 1958 (see graph on this page). Today the least expensive *Chevrolet*, *Ford*, or *Plymouth* is priced at about \$2200 delivered to the purchaser without extra equipment, and the first year's depreciation will likely amount to over \$500, or about 25 percent. The consumer has gradually become aware that he obtains very little in the way of a better automobile for the increased prices he has to pay each year.

Ford is said to have spent \$185 million to bring out 1958 *Fords*; most of this huge outlay went for styling changes to make the cars look different from the 1957 models and, of course, to try to capture a larger share of the market. Cost of repairs from collisions also has increased by leaps and bounds because of wrap-around windshields (replacement cost about three times as much as for a flat windshield), elaborate tail-fin assemblies, gaudy and functionless tail-lamp arrays, front fenders with built-in directional and parking lights and dual headlamps. The soaring increases in repair costs have resulted in markedly

higher insurance rates. If these trends continue, there is a strong possibility, we believe, that the foreign cars will take over a really substantial share of the American market.



The difference in price between the American cars and Volkswagen was actually substantially greater than shown in the graph, as the delivered prices for the American cars were \$200 or more higher than the factory advertised prices, while Volkswagen's delivered prices were only about \$50 above "port of entry" prices that apply at or close to the east coast port. In 1941, the average factory-advertised price of the Chevrolet, Ford, and Plymouth cars was about \$780; in 1958, the "extra equipment" alone can cost that much.

Chevrolet

The purchaser of a 1958 *Chevrolet* has a choice of several engines or engine combinations ranging in rated horsepower (more than 50 percent higher than the horsepower actually available to propel the car) from 145 to 280 and standard transmission, *Powerglide*, or *Turboglide*. The standard six-cylinder engine is rated at 145 horsepower, the standard 283 cubic-inch V-8 at 185 horsepower. The 283 cubic-inch engine with a four-barrel carburetor and 9.5 to 1 compression ratio is rated at 230 horsepower, and with "fuel injection" (which few order because of its very high extra cost), 250 horsepower. An optional 348 cubic-inch V-8 engine rated at 250 horsepower is available and this can be fitted with a triple two-barrel carburetor, raising the rated horsepower to 280. The test car used by Consumers' Research was a *Biscayne* four-door sedan with the 283 cubic-inch 185-horsepower V-8 engine and *Powerglide* transmission. Its performance was more than adequate for any driver except the police, or those interested in racing or other dangerous pursuits. In the 0 to 60 miles per hour and 40 to 60 miles per hour ranges, the *Biscayne* was slightly faster in acceleration than last year's corresponding model. Miles per gallon of gasoline at a constant speed of 50 miles per hour was about the same as with the 1957 model.

Riding and handling qualities

The substitution of coil springs for the customary leaf springs at the rear has resulted in a somewhat softer ride, and while the ride is not as smooth as the *Plymouth*'s with torsion-bar suspension, most drivers considered the ride an improvement over previous models and quite satis-

factory. The car held the road very well and handled nicely. The seat springs, particularly in the back of the front seats, were very stiff and made for tiresome riding on a long trip, in the opinion of one experienced driver.

General comments

The instrument panel arrangement left much to be desired. The steering wheel largely obscured the speedometer for some drivers. Control knobs were identified but not illuminated, and the location of the ignition key behind the lever of the automatic transmission made it difficult to operate the key unless the lever was in the park position. There was a pronounced sharp edge at the lower part of the dashboard; this was objectionable from a safety standpoint and would increase the severity of injuries in accidents.

Hood and fender ornaments are not present on the *Biscayne* and the cheaper *Delray*; absence of these ornaments in no way detracts from the appearance of the car; on the other hand, undesirable sharp fender ornaments are used on the *Bel Air* series. To match the dual headlights, what appear to be four combination parking-turn signal lights are used on the front of the *Chevrolet*; the inner two, however, are dummies merely for decorative purposes, if you can call that ornamentation. Leg room was adequate, but headroom in the rear was not sufficient for a tall person.

The fresh-air intake for the heater is now located at the top of the cowl, a much more desirable location than at the headlight level used last year which permitted carbon monoxide from the cars ahead to be drawn into the car. Judged to be a solidly and well-built car, but too long.

Ford

Ford this year offers a 223 cubic-inch 6-cylinder engine rated at 145 horsepower, available on all models; a 292 cubic-inch V-8 rated at 205 horsepower is standard equipment on *Custom 300*. A 332 cubic-inch V-8 rated at 240 horsepower is standard on *Fairlane* and *Fairlane 500*. A 352 cubic-inch V-8 rated at 300 horsepower, which calls for premium gasoline, is optional on *Fairlane*, *Fairlane 500*, and *Ford* station wagons.

The test car bought by Consumers' Research was a *Custom 300* with a 205-horsepower V-8 engine and *Fordomatic* transmission. Performance in acceleration was faster than last year's model, which was rated at 190 horsepower, and although acceleration was not as great as on the *Chevrolet*

and *Plymouth*, in the 40 to 60 miles per hour range, the *Ford* was considered to have more than ample power. Gasoline mileage at a constant speed of 50 miles per hour was somewhat less than for last year's corresponding model.

Riding and handling qualities

The riding quality of this car was judged only fairly good, and fell below both *Plymouth* and *Chevrolet*. The right rear shock absorber on the test car was noisy, producing annoying thumps. Cornering was good, but the car was noticeably light at the rear (56 percent of the weight is on the front), and the rear end tended to drift on turns under bumpy road conditions.

	Chevrolet Biscayne V-8	Ford Custom 300 V-8	Plymouth Belvedere V-8
Taxable horsepower	48	45	48.9
Taxable weight, pounds	3445	3345	3430
Engine			
Cylinder arrangement	V-8 overhead valves	V-8 overhead valves	V-8 overhead valves
Piston displacement, cubic inches	283	292	318
Rated horsepower at rpm.	185 at 4600	205 at 4500	225 at 4400
Compression ratio	8.5 to 1	9.1 to 1	9.0 to 1
Oil filter	Available at extra cost	Full flow	Shunt type
Gasoline required	Regular	Regular	Regular
Cooling system capacity with heater, quarts	17	20	21
Chassis and body			
Wheelbase, inches	117.5	116	118
Over-all length, inches	209	202	206
Width, inches	78	78	79
Height, inches	57	57	56.5
Tires	7.50 x 14	7.50 x 14	7.50 x 14
Brake factor*	37	44	44
Minimum road clearance, inches	6.8	6.0	5.4
Turning diameter, feet	37.7	40.1	42.2
Steering wheel turns, full left to full right	4.5	4.3	4.8
Other details			
Battery	12-volt 53-amp.-hr.	12-volt 55-amp.-hr.	12-volt 50-amp.-hr.
Gasoline tank, gallons	20	20	20
Windshield wipers	Electric	Vacuum	Electric
Curb weight of car tested, pounds	3738	3659	3881
CR's findings on road tests			
Miles per gallon of gasoline at steady speed of 50 m.p.h.	17.4	17.3	16.0
Over-all m.p.g. during tests	15.0	14.9	14.2
Acceleration times in seconds			
0 to 30 m.p.h.	4.1	4.2	4.9
0 to 60 m.p.h.	11.4	12.9	12.4
20 to 50 m.p.h.	6.0	6.9	6.6
40 to 60 m.p.h.	5.8	7.3	5.6
Speedometer error at 50 m.p.h., percent	6, fast	4, fast	4, fast
Odometer error, percent	5, fast	0	4, fast

* Brake factor is a number indicative of the probable relative life of brake linings. The higher the number, the longer the probable life of the brakes.

General comments

The *Holley* carburetor with which this car was equipped had a positive stop for the throttle, and there appeared to be no likelihood of its jamming in full throttle position, as occurred on one of last year's *Ford* test cars. The instrument panel was well arranged, and the controls were very well identified and illuminated. Easily the best of any car tested to date in this respect. The top of the dash was padded, but the padding was considered too thin to be of much value from the safety standpoint.

Front vent panes were poorly designed and difficult to operate. This year's *Ford Custom 300* has no hood and fender ornaments (showing how easy it is to eliminate spear-point hazards from

cars), but fender ornaments are available as accessories. The front inside door handles were located in such a position that they could accidentally be opened with the knee. The inside catch for the trunk protrudes downward several inches, presenting a serious hazard to the head of a person using the trunk. The trunk had no exterior handle and there was a tendency to close the trunk by grasping one of the plastic taillight lenses, certainly an undesirable way to provide for closing of a trunk. The heater fan was fairly quiet at high speed; its fresh-air intake was located on the top of the cowl, a desirable arrangement. Headroom in the rear was inadequate for a tall person. Quality of workmanship in the interior, particularly the roof lining, was poor.

Plymouth

The changes in outward appearance of 1958 *Plymouths* and other Chrysler cars as compared with 1957 models is so slight that only an exceptionally observing person would detect the difference. Continuation of the previous body design is, of course, very desirable, particularly if the maker passes on to his customers the savings obtained by not changing the appearance just to make the new model look different. Detroit has long held that sweeping changes must be made each year in order to maintain sales; perhaps *Volkswagen*, which has not been changed drastically over a period of many years and yet has terrific appeal to many thousands, is giving Detroit's

motor makers food for thought. (English cars, too, show a commendable degree of design stability.)

Plymouth offers a choice of engines ranging from the *PowerFlow 6*, rated at 132 horsepower, to the *Golden Commando V-8*, rated at 305 horsepower (315 horsepower with fuel injection). The *Belvedere* 4-door sedan tested by CR was equipped with the *Fury V-8* engine rated at 225 horsepower, *PowerFlite* transmission, and power steering. The performance of the *Belvedere* in acceleration was close to that of the *Chevrolet Biscayne* and more than adequate. Miles per gallon at 50 miles per hour were about 10% below *Chevrolet* and *Ford*.

PRICES OF 1958 CHEVROLET, FORD,

	Suggested list		Dealer handling charge	Freight	Delivered price, New Jersey	
	6	V-8			6	V-8
Chevrolet Delray	\$2115	\$2231	\$40	\$72	\$2227	\$2343
Chevrolet Biscayne	2250	2366	40	72	2362	2478
Chevrolet Bel Air	2400	2516	40	72	2512	2628
Ford Custom 300	2094	2231	25	70	2189	2326
Ford Fairlane	2260	2384	35	70	2365	2489
Ford Fairlane 500	2413	2537	35	70	2518	2642
Plymouth Plaza	2134	2242	310		2444	2552
Plymouth Savoy	2270	2378	310		2580	2688
Plymouth Belvedere	2405	2513	310		2715	2823

Note: Prices were obtained from dealers in New Jersey. On Plymouth, it is the practice of dealers to lump handling and freight charges together, and these prices as quoted obviously include a price pack of about \$200.

Riding and handling qualities

The interior noise level was very low. Riding and handling qualities and cornering ability were very good. In riding quality, the car was superior to either *Chevrolet* or *Ford*. The power steering was fast, $3\frac{1}{2}$ turns from full right to full left, but too nearly effortless in operation, so that the driver was left without a good feel of the road, and there was a strong tendency to oversteer.

General comments

The windshield distortion which CR criticized on last year's *Plymouth* was still present on the current model. The instrument panel was well arranged. Controls were marked by raised letters (H for lights, L for cigarette lighter) but were difficult to read because of lack of contrast of the letters with the background. They were not

illuminated and were poorly designed from a safety standpoint, with sharp corners. The front vent panes were very small, and difficult to operate. The rear-view mirror located on the top of the dash was of little use with three passengers in the rear seat. (An outside rear-view mirror is an essential accessory for this car.) Leg room and headroom were adequate. The push-button shift had no "Park" position. This is a marked disadvantage, as the only parking brake available is the brake acting on the drive shaft, which CR does not consider satisfactory. The large transmission hump in the front makes the front seat suitable for only two adults. Objectionable sharp ornaments are used on the front fenders. Trunk space was ample, but the spare tire was mounted flat on the floor, which some might consider objectionable.

SUMMARY

Disregarding all the sales ballyhoo for swept wings, new beauty, sculptured rear decks, spectacular new shapes, elegance and luxury, which are merely terms dreamed up by the busy and imaginative ad-men, the 1958 *Chevrolet* is considered first choice by Consumers' Research among the Big Three, with *Plymouth* second and *Ford* third. While all three are, as usual, deficient in some respects, they are all comfortable, and of course have more than ample power. All three tentatively warrant an *A-Recommended* rating. One serious shortcoming of all three and indeed all

the other 1958 cars is the lack of space between the rim of the steering wheel and the front seat.

In comparison to the foreign cars, *Ford*, *Plymouth*, and *Chevrolet* are too big, too vulnerable to expensive damage in a minor collision, expensive to operate, and too high priced. The high prices are, of course, due in part to wage increases far in excess of productivity gains, and to vast yearly expenditures for restyling. These factors are sure to force many consumers out of the American new car market into the used car and foreign car markets.

AND PLYMOUTH 4-DOOR SEDANS

Prices of "extras"										
Radio	Heater	Automatic transmission	Power steering	Power brakes	Air springs	Oil filter	Two-tone paint	Under-coating	Whitewall tires	
\$76 or \$99	\$87	\$190 or \$235	\$80	\$54	\$123	\$16	\$35	\$35	\$45	Chevrolet Delray Chevrolet Biscayne Chevrolet Bel Air
71	71	180 or 198	69	37	156	Std.	22	35	33	Ford Custom 300 Ford Fairlane Ford Fairlane 500
73	69	180 or 220	77	38	—	Std.	20 or 34	35	33	Plymouth Plaza Plymouth Savoy Plymouth Belvedere

Std.—Standard

Contact copying machines

Almost indispensable in many business and professional offices, these machines have uses too for students, educators, and persons doing literary, historical, or scientific research

THE PROSPECTIVE BUYER of a copying device, if he lets any supplier know of his interest, will almost surely be offered a "free demonstration" and is quite likely to be subjected to high-pressure salesmanship. If he writes to a manufacturer or dealer for information, or sends in a coupon clipped from an advertisement, the "free booklet" expected in the mail is likely to arrive in the hands of an eager salesman, or the salesman will arrive a few days after the brochure comes by mail. (The trick of getting a salesman through the door by having him deliver a "free booklet" is not confined to the copier industry; it has been widely used by others also, the sellers of the Encyclopedia Britannica, for example. If you do not wish to see a salesman, be sure to say so emphatically in your letter or write "NO SALESMAN IS TO CALL!" prominently on the coupon.)

Prices of copying machines start at about \$150. The cost of each letter-size copy varies from about 10 cents down to 1 cent depending on the type of copier and the number of copies to be made.

The four copying processes

The first decision to be made is the *type* of machine, rather than the brand. The four common copying processes are: diazo, thermal (using heat), dye-transfer, and silver-transfer.

In each of these, "contact" printing is used; the first step is to place the material to be copied flat against a sensitized sheet and expose the combination to light or to radiant heat. In the diazo (sometimes called *white-print*) process, light shines *through the original* onto the copy paper. Diazo machines require translucent originals with printing, writing, or drawings on one side only. The other three processes use *reflected* light or heat. In these, the sensitized copying material is placed in contact with the material to be copied and the exposure is made *through the sensitive paper*. Light (or heat) is reflected back from the original material to the sensitive surface. *Dye-transfer* and *silver-transfer* copiers use re-

flected light, while heat is the active agent in the *thermal* copying process.

In either the diazo or the thermal procedure, the originally exposed sensitive paper itself becomes the final copy. Diazo prints require chemical development by exposure to ammonia gas or to a liquid developer. The thermal print requires no further treatment after exposure.

Both the dye-transfer and silver-transfer processes involve negatives which are developed in liquid baths. Positive copies are obtained by squeezing a positive paper into close contact with a damp negative, allowing it to remain a brief period while the image "transfers"; the papers are then stripped apart. A dye-transfer negative can be re-used a number of times to obtain additional positive copies by squeezing more copy papers, one at a time, against the negative and stripping them off. An inexperienced operator can obtain about four or five fairly good copies, and an expert can often get 10 or 12 usable copies from one negative, although the last few will be rather faint. In the dye-transfer method, the copy is taken off on plain paper.

The silver-transfer process requires a special chemically-coated copy paper (but the coating is not light-sensitive). As a rule, the silver-transfer process permits obtaining only one copy from each negative, although some manufacturers claim three or more copies can be made. Special papers, special developers, especially low surrounding illumination, and special operator skills are needed, however, to obtain multiple copies by the silver-transfer process, and the prospective buyer should investigate details carefully and actually try the machine out, if he plans to rely on this type of copier for more than one copy per negative.

Two kinds of printers

To make the exposure required by any of the copying methods, a choice among flat-bed and roller-type printers is offered by many manufacturers, although some supply only one of the two types. The roller type carries the original docu-

ment and the sensitive paper past a source of light (or radiant heat). Only thin and flexible original material can be used. For copying pages in magazines or books or other thick or non-flexible originals, a device called a flat-bed printer is needed.

The diazo process, of course, cannot handle books and other thick items or material printed on both sides, regardless of the type of printer, unless a translucent copy to serve as an original is first made by another process.

How much do copies cost?

Diazo copies are the cheapest; they cost less than 2 cents each. Copies made by the thermal process run a little over 5 cents each. Silver-transfer copies are about 9 cents each. With the dye-transfer process, the first copy costs about 10 cents, and additional copies, up to the five or so obtainable from one negative, cost about a cent each; thus the cost *per copy* for dye transfer would run from about 3 to 10 cents.

All the preceding figures are for 8½ x 11 inch copies, based on paper and chemical costs in the smallest packages offered; prices for quantity users are a little lower. Costs of labor and allowances for depreciation of equipment, repairs, and replacement of lamps and other parts are *not* included. Depreciation may often be a significant part of the cost per copy. For example, if equipment costs \$300, is assumed to have a 10-year life, and is used to make copies at an average rate of 30 per week, the real total cost of each copy must include about 2 cents toward the ultimate replacement of the machine. The amount of time required to make a print plays a part in determining the convenience of using a machine, and is a factor in determining labor cost for business users.

The time required to make a copy varies widely. From 30 seconds to a minute is required for each silver-transfer copy. The dye-transfer process is the same, for the first copy; copies after the first take but 2 or 3 seconds each. A desk-top diazo printer can produce a copy in about 15 seconds from a translucent original. The time for a thermal copy is about 5 seconds.

Some drawbacks of each process

- The *diazo* process requires translucent originals written, drawn, or printed on one side of the paper only. Most small machines require 10 amperes of electric current (1200 watts) while running. (If the machine is used for many copies, cost of electricity *per copy* is small.) Venting

Hi-Fi servicing problems

in previous articles that it obtain satisfactory service in radios on separate high-fidelity components, pickups, amplifiers, and sections of these in a home stereo system. Radio and television have the ability or the test to put an ailing amplifier or a A-1 condition.

for example, which would and inexpensive if handled can, often turn into a "big one at the local level.

indeed, are unaware of the alignment and alignment that a hi-fi system is to give. In addition, the serviceman and instruments required FM tuner, for example, will do on a basis commensurate with the cost of the system.

A \$10 charge to align an AM tuner is not high and the charge 20 to \$25 in some shops. the initial cost of a hi-fi system.

Like your car, the equipment needs service and adjustment

to question the ability of generally. Many of them are being radio or television repairmen have had much experience with high-fidelity components, field in which some repairmen work pretty inefficiently, for a needed reference material and the necessary specialized

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Read later in new form

Figure 1—The Thermo-Fax copy shown above remained for a time partially covered on a desk near a window. The darkening at the right was caused by sunlight falling on the copy. Fifteen days in the dark at 115°F also caused slight darkening of Thermo-Fax paper.

may be needed to prevent any odor around a machine using vapor developing.

- The *thermal* process will not copy some kinds of ink, including some colored printers' inks, some fountain pen inks, and some ballpoint pen inks.



Figure 2—Most copiers do not reproduce halftones well from a printed page. At the left (a) is the original. The silver-transfer copy (b) is the best. A dye-transfer copy (c), made with an exposure time best for reproduction of the printed text, does not show details of the picture. Later copies (d) from the same negative are even poorer; (d) is the seventh copy from the negative used to make (c). After experimentation to determine the best exposure time, dye-transfer copy (e) was obtained, which shows a better picture at the expense of poorer reproduction of the printed text. A Thermo-Fax copy (f) is at the extreme right.

Finished copies remain sensitive to heat and can become blackened subsequently, if kept in a hot place or in sunlight. Thus without adequate control of storage conditions, thermographic copies are not necessarily permanent. (See Figure 1.) The only thermal machine for 115-volt operation, the *Thermo-Fax Secretary*, is rated at 15 amperes.

The *diazo* and *thermal* processes are thus limited in the types of original they can handle. (This is no problem if the user has control over the preparation of the originals.) Both these machines have electric current needs that may overload some supply circuits; this should be checked in the proposed place of use.

- *Dye-transfer* prints after the first are progressively fainter. The developing process with dye transfer is less fully "automatic" than with some other copiers, because roller-feed developing is not practicable as it would interfere with the rapid repeated insertion of the negative that is required to make copies after the first. For single copies, time of production and cost per copy are relatively high. Subdued surrounding light is desirable, but the permissible level is likely to be higher and less critical than with the silver-transfer process.

- *Silver-transfer* prints take longer to make and

are more costly than the others (except the dye-transfer process when used for one print only from each negative). The developing solutions must be removed at the end of each day's use and kept in stoppered bottles until needed again. The silver-transfer method may require subdued light. The "speed" of the negative paper used determines the permissible level of lighting.

The prospective buyer of a transfer process machine should insist on trying out the machine under the lighting conditions under which he will use it.

Consumers' Research has examined a variety of copying devices, has observed demonstrations of many of them, and has used several for trial periods in its offices and laboratory. However, the tests made by Consumers' Research were not extensive enough on all brands considered to justify rating them as *A. Recommended*, *B. Intermediate*, and *C. Not Recommended*. (CR has not tested any of the machines for electrical safety. See the *Consumer Bulletin Annual* section on "Safety in the home" for general information about electrical hazards and advice about grounding of appliances.)

After each manufacturer's name in the list below, prices are given for the lowest price units available of the following sorts:

CPD, R—combination printer and developer in single machine, roller-feed printer

CPD, FB—combination printer and developer in single machine, flat-bed printer

FBP—separate flat-bed printer

PFBP—portable flat-bed printer (including case, if separately available)

D—separate developer

The prices given should be considered merely a rough guide. Only the lowest price for each type listed is given; space does not permit including information as to size and other details, which must be known to compare values. The initial cost of obtaining and putting into use any of these machines will include some extras, for example, a holder and dispenser for paper (built into some machines, but with others it is an extra that may cost \$25 or more). The extras, depending on the machine involved, and one's needs and tastes and how large a supply and variety of papers is put into stock, can easily run up to an extra amount of \$100 or more. Before making any decision to buy, it is a good idea to have the salesman write out the proposed order, *including all accessories and supplies*. Then take a good look at the *total* price.

Diazo process

Copyflex (Charles Bruning Co., Inc., 4700 Montrose Ave., Chicago 41) CPD, R \$555 (fluid developing).

Ozalid (Ozalid Division of General Aniline & Film Corp., Johnson City, N.Y.) CPD, R \$410 (vapor developing).

Pelprinter (Pelprinter, Inc., 555 Central Ave., Orange, N.J.) Portable printer (7 lb.) and vapor developer, hand-operated, relatively inconvenient, but serviceable for some purposes, \$70.

Thermal process

Thermo-Fax (Minnesota Mining & Mfg. Co., St. Paul 6) Roller-feed printer (no developer required; see text), \$299.

Dye-transfer process

Photostat Instant Copier (Photostat Corp., Rochester 3, N.Y.) CPD, FB \$199. Utilizes Eastman Kodak Company's Verifax materials.

Verifax (Recordak Corp., subsidiary of Eastman Kodak Co., 415 Madison Ave., New York 17) CPD, FB \$148 (for the new *Signet* model; others higher).

Silver-transfer process

Apeco Auto-Stat (American Photocopy Equipment Co., 1920 W. Peterson Ave., Chicago 26) CPD, R \$395.

Contoura-Constat (F. G. Ludwig, Inc., Old Saybrook, Conn.) PFBP \$68. D \$87 (hand powered; \$29 extra for motor). Flat-bed printer has a translucent, plastic, air-inflatable cushion between light source and copy. The cushion, intended to allow the negative paper to be pushed tightly against an open book or other non-flat original, works fairly well. Presence of the cushion, however, makes for a little extra difficulty in getting good copies of flat originals.

(Continued on page 26)

Clear up troublesome questions about how and what to buy

BY READING Consumer Bulletin

Many subscribers have told us that they have saved many times the cost of a subscription by following Consumer Bulletin's advice in their buying. As one subscriber put it: "Any time we consider a major purchase, we consult Consumer Bulletin and we have found it saves us time, money, and future headaches."

For only \$6.50 a year you can secure Consumer Bulletin monthly and a copy of the big 224-page Consumer Bulletin Annual summarizing a wide range of CR's previous product reports by brand name. The new edition will be off the press early in September 1958. To subscribe today, just turn the page; fill out the form and return it with your remittance. Your first monthly Bulletin will soon be on its way to you. Your new Annual will be sent as soon as it is ready next September.



Copease (Copease Corp., 425 Park Ave., New York 22) CPD, R \$295. CPD, FB \$299. FBP \$108. PFBP \$80. D \$193.

Copycat (Copycat Corp., 215 Fourth Ave., New York 3) CPD, R \$295. FBP \$85. PFBP \$80. D (hand) \$85. D (electric) \$160.

Copy-Craft (Copy-Craft, Inc., 105 Chambers St., New York 7) CPD, R \$289. CPD, FB \$249. FBP \$149. PFBP \$80. D (hand) \$100. D (electric) \$200.

Cormac (Cormac Photocopy Corp., 80 Fifth Ave., New York 11) CPD, R \$299. FBP \$169. D \$123.

Dick (A. B. Dick Co., 5700 Touhy Ave., Chicago 31) CPD, FB \$350. Only machine known to Consumers' Research that combines in one unit a flat-bed printer and roller-feed developer. Printer will handle books and similar material up to about $1\frac{1}{8}$ inch, but not thicker.

Dri-Stat (Peerless Photo Products, Inc., Shoreham, N.Y.) CPD, R \$195. FBP \$131. D \$185.

Exact-Fax (General Photo Products Co., Inc., Chatham, N.J.) CPD, R \$225. FBP \$89. D (hand) \$85. D (electric) \$150.

Hecco Kwik (Hunter Photo-Copyist, Inc., Syracuse 4) CPD, R \$195. FBR \$165. PFBP \$80. D \$185. Similar in appearance to *Dri-Stat* machines.

Nord (Nord Mfg. Co., Mineola, L.I., N.Y.) CPD, FB \$179.

Photorapid (Duophoto Corp., 236 Fifth Ave., New York 1) CPD, R \$298. CPD, FB \$169. FBP \$135. PFBP \$80. D \$190.

Remington Rand (Remington Rand Division of Sperry Rand Corp., 315 Fourth Ave., New York 10) CPD, R \$350. PFBP \$80. FBP \$172.

Rovico Fotomate (Rovico, Inc., 318 Market St., Newark, N.J.) CPD, R \$275. FBP \$154. PFBP \$95. D \$195.

Which kind of copying device should one buy?

Each of the four processes will prove to be best for some users. For all-around use involving copying of a variety of original material, including pages in books and magazines, the dye-transfer process (e.g., Verifax) is probably best. If single sheets only need to be copied, and it is possible to avoid the use of certain inks and pencils that do not reproduce by the thermal process, then the *Thermo-Fax Secretary* is a good choice, because of its speed and simplicity of operation. It is cheapest per copy of the machines that do not require translucent originals (when only one copy is needed). Remember, however, that the copies must be protected from excess heat to remain usable.

For users of many copies who generally prepare for themselves the original material to be copied—as architects, engineers and the like, the diazo process may be best because of low cost per copy—despite its limitation that originals must be on translucent material and on one side of the paper only. For copies of the highest contrast and best over-all quality, select the silver-transfer process, keeping in mind, however, that this method is the highest in cost per copy and involves more handling of developing solutions than any of the others.

In short, each user should consider his own particular needs as related to the characteristics of the various copying methods. If at all possible, arrange for a trial period with assurance of money back if the method does not work well in a particular use. For some users, with a good deal of copying of various kinds, it may be sensible to consider installing more than one copying procedure rather than to compromise on a method that may not be best suited for all the work to be done.

Consumer Bulletin

WASHINGTON, NEW JERSEY

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New Renewal

I enclose \$2.50 (Canada & foreign, \$2.75) for a copy of the forthcoming September 1958 Consumer Bulletin Annual. Since I am a subscriber to Consumer Bulletin (12 issues), I am entitled to the special \$2.50 rate.

I enclose \$4.25 (Canada & foreign, \$4.50) for a copy of the forthcoming September 1958 Consumer Bulletin Annual (the Annual only).

CR-3-58

Choosing the right detergent for laundering

You should use a synthetic detergent ("syndet") if the water is hard.

You should use a "low-sudsing" or "controlled-sudsing" syndet if your washing machine has a rotating cylinder.

You can use either a low- or high-sudsing syndet if your washing machine is one with an agitator. With an agitator machine you may also use soap if your water is soft or softened.

For wash-and-wear garments—which are best washed in cool or warm water—use a liquid syndet (high- or low-sudsing, depending on the machine), since it dissolves faster than a powdered detergent, in water that is not hot.

For wool garments and sweaters, which are best washed in cool water, use a light-duty liquid detergent or, better still, one made especially for woolens. Such a detergent is designed to dissolve rapidly, give a good suds, and wash well even in cold water.

THE QUESTION is often asked—do synthetic detergents clean as well as soap? The answer is—they may clean better or they may not do as well. Much depends on the water. Syndets, unlike soap, dissolve completely in water, irrespective of the hardness of the water. Soaps, on the other hand, when added to hard water, combine with the hardness-producing elements—calcium and magnesium salts—and form an insoluble scum or curd. It is this scum or curd that produces the ring around the bathtub, sink or basin, the harsh-

ness in clothes, and hampers all kinds of washing, bathing, etc. Since syndets do dissolve completely, they will usually wash better than soap in hard water.

As already stated, syndets do not form insoluble soaps, but they do react to form calcium and magnesium salts—which cannot be seen but do cause a reduction in the cleansing effect. This, of course, means more detergent is needed to do the cleaning properly than if the water were soft. In soft or softened water—water which does not

contain calcium or magnesium salts or both—tests prove that soap does a better job than syndets.

Much of the water in the United States is hard, and relatively few families have water-softening equipment. Further, with more and more families buying and using automatic washing machines, syndets have become very popular, because in the automatic washing machine hard water combined with soap presents a real problem. If the water in an automatic washing machine contains scum or curd from soap that has reacted with the hardness of the water, the clothes will not come out clean.

In washing machines using a rotating cylinder or drum—not an agitator—it is essential that the level of suds on the wash water be kept to a minimum in order that the cushioning action of suds shall not decrease the washing action. Detergents which give low or controlled suds are available, but soaps all produce considerable suds when used in amounts sufficient to be effective in washing.

In recent months, another type of syndet has made its appearance on grocers' shelves. Besides the heavy and light duty, low and high sudsing syndets in powder form, with and without bluing or bleach, the consumer may now choose detergents of various types in liquid form. Since liquid detergents have the ability to dissolve more readily in warm or cool water than powdered detergents, they are especially convenient for washing so-called wash-and-wear garments, which need to be washed in water at a fairly low temperature.

Soaps and syndets sold for home use may be classified as heavy-duty ("built," for all-purpose cleansing) or light-duty (unbuilt, for mild cleansing). Each type can be bought in powder or liquid form. Heavy-duty syndets are available also in high- or low-sudsing types. Some of the many brands of syndets on the retail market are the following:

Light-duty: For hand or machine washing of fine and colored fabrics which are not heavily soiled—*Breeze, Chiffon liquid, Dreft, Joy liquid, Lux liquid, Trend, Trend liquid, Vel, Vel liquid.*

Heavy-duty (high-sudsing): For clothes washing in a washing machine and for all-purpose cleansing—*American Family, Biz liquid, Cheer, Fab, Felsol, Kirkman's, Oxydol, Rinso, Super Suds, Surf, Tide, Wisk liquid.*

Heavy-duty (low-sudsing): For use particularly in revolving-cylinder type washing machines and for all-purpose cleansing—*Ad, All, Dash, Fun, Hum liquid, Spin, Stanson Suds, Vim.*

The following listings of syndets include information condensed from the October 1956 CONSUMER BULLETIN on several brands that are still in wide use, as well as on several new brands on which tests were made very recently.

Light-duty

A. Recommended

Dreft • Glim liquid • Ivory liquid • Vel liquid

B. Intermediate

Breeze • Trend

Heavy-duty

A. Recommended

Breakwater • Fab • Oxydol Detergent • Rinso Sunlight Detergent • Surf • Tide

• • •
Kirkman All-Purpose Detergent • Super Suds Detergent

B. Intermediate

Ad • All • Biz liquid • Cheer • Sail • Dash • Vim • Wisk liquid

Soap for washing woolens

A. Recommended

Woolite (East Honey Harbor, Inc., N.Y.C.) \$1.50 for 1-lb. can. Intended for washing woolens in cool or cold water.

Emendations to Consumer Bulletin

European-made cars

Page 23, Jan. '58 Bulletin

Simca Aronde. The national distributor in the United States for this car is Simca, Inc., 445 Park Ave., New York City.

The 1958 cars

Page 30, Jan. '58 Bulletin

Change the first sentence of the last paragraph in column 1 to read as follows: "The trend to 14-inch wheels continues, with all cars using 14-inch wheels except *Buick, Cadillac*, and some *Rambler*

and *Studebaker* models." (It had been incorrectly stated that *Buick* had changed to 14-inch wheels.)

Circular saws

Page 17, Nov. '57 Bulletin

Page 103, '57 Annual Bulletin

Walker-Turner Model 2110. Delete this listing. The company is now a division of Rockwell Mfg. Co., Pittsburgh 8. The manufacture of *Model 2110* 8-inch tilting arbor saw has been discontinued.

Men's white business shirts

Consumers' Research reports on a continuing study of Dacron, Dacron-and-cotton, and resin-treated all-cotton shirts for men

HOW LONG does a man expect a white business shirt to give him good service? In our December 1957 BULLETIN, in an article on men's no-iron white shirts, we reported that, in a test of "minimum-care" shirts of either Dacron-and-cotton or all-cotton fabrics, the shirts were worn and washed 13 times, about half their estimated life. Some of our readers took exception to this figure, pointing out that their own shirts lasted much longer. This is not surprising, since experts themselves differ on the life of shirts.

In 1949, we reported that a conventional cotton shirt might be expected to tear and fray after its twentieth washing—or after the thirty-first washing, depending on which of two sources one considered the more reliable. In 1949, we had to confess that another source thought the 20-31 launderings much too few and that some shirts withstood more than 100 launderings (launderings only, without wearing of the shirts). Whether the shirt is worn or not, of course, has a lot to do with its useful life.

Some of the shirts in CR's test of so-called "no-iron" shirts have now been washed more than 30 times. A few, however, were retired from the study considerably earlier, because of faults which adversely affected their appearance to a noticeable extent. After about 15 wearings and washings, all of the shirts tested but one, the *Manhattan Docma* Dacron-and-cotton shirt, had a generally unsatisfactory appearance after laundering, until they were pressed lightly. When the shirts were new, some of them could be worn three or four times or more without any touch-up pressing after washing.

Stitching came in for its share of criticism on both shirts of Dacron-and-cotton fabrics and the "no-iron" cotton shirts. Where double rows of stitching were used in the seams and pocket areas of the cotton shirts, there was puckering that in most cases became progressively worse with each wearing and laundering. Single seams did not show so much puckering. Some of the Dacron-and-cotton shirts showed puckering of the seams, but some did not.

The wearers of the shirts began to develop very definite opinions about shirts made of the different fabrics as the test progressed. The principal

How CR conducted its tests of "no-iron" shirts

Shirts were worn one day, machine-washed in warm water with no final spin-dry cycle, and then hung on plastic hangers and drip dried. This routine was followed until each shirt had had 13 wearings and launderings.

In the next series of tests, the same shirts were worn and washed as before, but dried in an electric clothes dryer. Care was taken to tumble only a few shirts at one time, with a small load of clean terry towels, in the dryer with the temperature set at low (130-150°F). The dryer had a "finish" cycle, during which the heat was off and the shirts were tumbled as the dryer cooled.

criticism of the Dacron-and-cotton shirts was the lack of opaque whiteness which the men had come to associate with good appearance in a white business shirt. As one wearer said in commenting on a Dacron-and-cotton shirt that had been worn and washed 30 times: "I'm not sure I like the sheer material, as the appearance is not as white as a shirt of heavy material. This shirt has excellent appearance, although it is not quite as good as a starched cotton shirt."

The resin-treated cotton shirts did not come in for any criticism about color except for the samples made of an improperly finished fabric, which took on a yellowish tint. On the other hand, the fabrics in the body of the shirts developed an increasingly rough, pebbled look, especially after the shirts had been dried in an automatic dryer. Sometimes these pebbly, shadowy wrinkles did not respond to pressing.

On the plus side for shirts of both kinds of fabrics were the comments of the panel of wearers when they began to wear their own home-laundered or laundry-laundered ordinary cotton shirts after about 15 weeks of wearing the minimum-care shirts. The conventional cotton shirts sometimes had a pebbled, rough-dry appearance and shadowy

wrinkles, too, just as the resin-treated cotton shirts did. The men just hadn't paid much attention to them before, it seems. Furthermore, the conventional shirts became more and more mussed as the day passed, so that by noon of each day the more critical wearers began to feel that their *conventional cotton shirts* were too badly wrinkled for first-class appearance. Some of them were frank to acknowledge they had not noticed this deterioration in appearance before they wore the "no-iron" shirts. Some of them felt that the characteristic of the "no-iron" shirts of maintaining their appearance throughout a working day was an advantage that fully offset the slightly less attractive appearance of the "no-iron" shirts at the beginning of the day.

How about the laboratory workers who washed the shirts and then pressed them when required? Did they have any opinions? They did about the laundering procedure. First of all, it is a nuisance to remove the shirts from the washer before the spin cycle and to have 15 shirts dripping all over the floor. Dryer-drying was preferred, even though in the case of resin-treated cotton shirts pressing was required after each dryer-drying. The vote was unanimous in favor of pressing the "no-iron" shirts as against dampening and ironing conventional cotton shirts.

By the end of December, it was judged that none of the "no-iron" shirts from the original test remained in first-class condition. This conclusion is arrived at because no two men on CR's panel were in agreement as to any shirt that still was sufficiently fresh looking to be used for a luncheon speaking engagement or for an important conference or date. As might be expected, however, opinions differed widely, and here again the personal factor has a great deal to do with what is considered acceptable and what is not. The following listings include some shirts that were included in the study but about which full information was not available earlier to permit inclusion in the December report.

At least two manufacturers changed the fabrics used in their shirts since the December 1957 report. F. Jacobson & Sons, Inc., manufacturers of *Jayson Laundeze*, and the Fordham-Bardell Shirt Co., manufacturers of *B.V.D.* shirts, report that they have discontinued use of the all-cotton fabric which became discolored (turned yellowish). A new cotton fabric now used by these companies is claimed to give superior performance. *Jayson* shirts made of it are now being tested, and after 10 and 12 washings, two samples still have a fresh, white appearance. The earlier shirts had a yellowish look after as few as five wearings and washings.

Dacron-and-cotton and Dacron shirts

A. Recommended

Arrow Wash'n'Wear (Cluett, Peabody & Co., Inc., Troy, N.Y.) \$7.95. This shirt was retired after 31 wearings and washings, as it was not fresh-looking.

Manhattan or Manhattan Decoma (The Manhattan Shirt Co., 444 Madison Ave., New York 22) \$7.95. Two samples were still in use and of satisfactory appearance after 31 and 34 wearings and washings, respectively.

Penney's Towncraft (J. C. Penney Co., Inc.) Two for \$6.29. Still in use and of satisfactory appearance after 32 wearings and washings.

Penney's Towncraft Taslan Dacron (J. C. Penney Co., Inc.) Two for \$7.25. Still in use and of satisfactory appearance after 26 wearings and washings.

Pilgrim (Sears-Roebuck's Cat. No. 33-378) \$4.80, plus postage. Retired after 29 washings, because soil on collar and cuffs could not be washed out.

Wings (Wings Shirt Co., 4 W. 33 St., New York 1) \$5.99. Still in use and of satisfactory appearance after 25 wearings and washings.

C. Not Recommended

Longwear (New Process Co., Warren, Pa.) \$3.97, plus postage. Shirt was retired after 20 washings; it had poor construction, and the fabric developed an over-all gray appearance.

Truval (Truval Mfrs., Inc., Empire State Bldg., New York 1) \$4.95. Retired after 15 washings. Fabric was thin, and appearance generally poor. This shirt required pressing after each laundering, from the beginning.

All-cotton shirts

A. Recommended

Manhattan Mansmooth (The Manhattan Shirt Co.) \$5.95. Still in use and of satisfactory appearance after 25 wearings and washings.

Pilgrim, Sonic (Sears-Roebuck's Cat. No. 33-334) \$4.80, plus postage. Still in use and of satisfactory appearance after 29 wearings and washings.

Shircraft N13 (Shircraft/Airman, Inc., Empire State Bldg., New York 1) \$3.95. One sample still in use and of satisfactory appearance after 20 wearings and washings. Second sample was retired after 10 washings, as soil on its collar could not be washed out.

Silver Wings (Wings Shirt Co.) \$4. Still in use and of satisfactory appearance after 20 wearings and washings.

Van Heusen Vantage (Phillips-Jones Corp., 417 Fifth Ave., New York 16) \$5. Still in use and of satisfactory appearance after 33 wearings and washings.

B. Intermediate

Penny's Towncraft Minimum Care Cotton (J. C. Penney Co., Inc.) Two for \$4.92. Still in use and of good appearance after 28 wearings and washings. Required pressing after each laundering after either drip-drying or drying in the dryer.

ARSENIC in cigarettes

(Please turn to page 39 for the beginning of this article)

little as 20 milligrams in a single dose has proved fatal.

Very little is known as to what small amount might be taken in daily without risk of arsenic's cancer-causing effect after 10, 20, or 30 years. It may be, of course, that lung tissue is far more sensitive to the action of arsenic than other parts of the body.

No one knows what portion of the 90 micrograms of arsenic that a heavy smoker of American cigarettes may draw into his body each day will remain there and what portion will be expelled with the exhaled part of the smoke. And no one knows what daily dose would be large enough to trigger the changes in exposed cells that may, after many years, become a cancerous growth. Lacking, too, is the knowledge of the extent to which arsenic may contribute, along with various other highly poisonous and irritating substances in cigarettes, such as benzpyrene, to bringing on a cancer that might not have originated if the body had been exposed to arsenic alone. It seems probable, since death rates from lung cancer are much higher in cities than in rural areas, that the combination of atmospheric pollution by smoke, dust, and fumes, with cigarette smoking, triggers that dreaded and usually fatal disease.

In any event, about one man in ten over 25 who smokes more than 20 cigarettes a day—about the average number consumed by American smokers—will contract lung cancer by the age of 75. A person smoking two packs a day has a 70 times greater chance of developing lung cancer than a non-smoker; one in 8 to 10 men smoking that much can expect to die of lung cancer.

When arsenic is the homicidal material in a story of crime, it often turns out that the deadly substance was filched from the "gardener's shed" where it was kept for making up insecticidal plant sprays. It is this use of arsenic for field crops that probably also accounts for the contamination of cigarette tobacco. Arsenical pesticides were used for many years in the tobacco fields. Although these materials are believed to be no longer in extensive use, the soil seems to have retained from repeated drenchings with the powerful bug-poisons enough arsenic to account for the amounts found in cigarettes. (In some orchards in the Far West, the soil became so impregnated with arsenical insecticides that the fields had to be abandoned as useless for the growing of crops; arsenical soil poisoning in tobacco growing areas has also been a factor of serious consequence to growers.)

ARSENIC CONTENT OF CIGARETTES

in micrograms of arsenic per gram of cigarette*
(excluding filter tip, if any)

AMERICAN BRANDS (in alphabetical order)

Camel	15
Chesterfield	19
L & M	23
Lucky Strike	19
Marlboro	10
Pall Mall	15
Philip Morris	20
Viceroy	5
Winston	17

NEAR-EAST BRANDS

Abdullah & Co., Ltd., "Turkish No. 11"	.01
Ed. Laurens, "Le Khedive"	none
Hellas No. 1	none

* A "regular" size cigarette weighs roughly one gram. A microgram is one millionth of a gram; a gram is about 1/28 of an ounce. NOTE: For these determinations of arsenic content, the cigarettes were pre-treated or "digested" in acid in accordance with a method developed by C. C. Cassil of the U. S. Department of Agriculture. Some investigators have reported that another technique involving combustion in a closed bomb shows that cigarettes contain even larger quantities of arsenic. (Some is said to be lost in the acid-digestion process of analysis.)

The substitution of other materials for arsenicals once generally used to spray tobacco fields was begun in 1946. Nevertheless, it is apparent that tobacco plants grown in these fields 11 years later absorb appreciable amounts of arsenic. As a matter of fact, there is no noticeable reduction as time passes. Cigarettes analyzed for Consumers' Research in 1934, 1936, and 1938 showed arsenic contents which in many cases were of the same order of magnitude as were found in the current tests. When, if ever, through the operation of natural causes, the soil may become free of arsenic to the extent that tobacco plants do not absorb it is not known. It is at least possible, though we think it unlikely, that means may be devised to decontaminate the fields, to prevent the plants from absorbing arsenic, or to remove the arsenic from the tobacco before it is used or even to provide means that will filter most of the arsenic from tobacco smoke. This problem is one of a number of very serious responsibilities of the tobacco industry, which has shown an astonishing lack of interest in arsenic as a carcinogen.

Fortunately, for smokers who can be choosy about their cigarettes, tobacco grown in some

places outside of North America seems to contain little or no arsenic. Tests of cigarettes made from Greek and Turkish tobaccos showed amounts of arsenic that seem negligible by comparison. *English* cigarettes are likely to be made from "Virginia" tobacco and published reports indicate that the arsenic content is comparable to that in the American product.

Consumers' Research would be happy if it could simply advise readers who smoke cigarettes to choose those made from relatively arsenic-free tobacco grown in the Near East. This would be good advice if it were certain that arsenic is the cause or a major cause of the well-established relationship between smoking and cancer of the lung. It seems good advice in any event for heavy smokers who are unwilling to give up their addiction, but would like to diminish their rather severe chances of acquiring lung cancer in later life. (It is estimated that 80 percent of the lung cancer that exists—there are 30,000 new cases a year—would not occur if there were no smoking.)

In any event, it seems possible that arsenic may not be the *only* cancer-causing material present in cigarette smoke. But Consumers' Research can say that arsenic was found in samples of various brands of cigarettes as shown in the table. Since arsenic is *known* to be a cause of cancer in human beings, a consumer who chooses to safeguard his health to the extent that is reasonably possible will wish to give serious consideration to these facts.

It is recommended that medical men and scientists who are interested in the brief outline of the subject in this article should read the comprehensive treatment of arsenic as a factor in cigarette smoking in the paper "The Problem of Arsenic in American Cigarette Tobacco," by Dr. Henry S. Satterlee, published in the New England Journal of Medicine for June 21, 1956.

Dr. Satterlee is not only an able physician and physiologist but a leading expert on analysis of tobacco for minute quantities of arsenic and the association of arsenic with the types of hydrocarbons believed to have cancer-causing effects. He developed precise techniques of chemical analysis of biological materials for arsenic in very small quantities. In the paper cited, he reports that one group of authors examined 13 patients with uterine cancer and found in their tumor tissues 25 times more arsenic than was found in the circulating blood of the same patient, and 100 times more than is found in normal tissues. This does not conclusively incriminate arsenic as the cause of cancer but pretty clearly suggests that it might be a factor in the causation of the most common type of lethal cancer in women. Because of smokes and dusts produced in various industrial processes, arsenic is present in surprisingly high amounts in the dust in urban homes. In one test of city air, arsenic was found to run as high as 290 to 2700 parts per million. So high a degree of contamination with arsenic is, of course, serious and disturbing.

BrewMaster electric teapot

(Continued from page 2)

again from the stigma attached to the words "Made in Japan" in earlier years. Japan's industries, particularly those industries which relate to electrical equipment, where there is the possibility of shock hazard, should at once set up an organization to control the quality and safety of appliances before they are shipped abroad, with particular attention, of course, to the design features such as those of the teapot which offend several sound principles of good engineering. It is, of course, necessary not only to control design, but also workmanship on individual products coming off the production line; each should be properly inspected and tested for electrical and mechanical safety. The Japanese have set an excellent example in the camera industry by the excellent inspection system which they have ap-

plied in their competent and effective Japanese Camera Institute. This Institute provides for proper inspection and tests to see that all exported cameras and binoculars which bear its seal are of good quality that will bring credit rather than discredit to Japanese products. The Underwriters' Laboratories' seal or label should be looked for on all electric equipment and devices for home use, and until this appears on Japanese and other foreign-made devices, it would be better to confine purchases to American-made products of known manufacturers who meet the requirements of *UL* specifications.

C. Not Recommended

Electric BrewMaster (Made in Japan) \$1.99 to \$3.50. Marked OMSCO on bottom of pot. Electrically unsafe.

Ratings of Motion Pictures

THIS SECTION aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Boxoffice, Cue, Daily News (N. Y.), The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, The Tablet, Time, Variety (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

A	B	C			
—	—	5	Abductors, The	dr AYC	—
—	6	3	Abominable Snowman, The (British)	sci-mel AYC	—
—	9	7	Across the Bridge (British)	dr A	—
—	7	8	Action of the Tiger (British)	war-mel-c A	—
1	10	5	Admirable Crichton, The (British)	dr-c AY	—
—	3	2	Adultress, The (French)	dr A	—
—	2	6	Affair in Havana	cri-mel A	—
—	2	3	Affair in Reno	mel-c A	—
—	5	6	All at Sea (British)	com AYC	—
1	7	1	All Mine to Give	dr-c AYC	—
—	5	4	Alligator Named Daisy, An (British)	mus-com-c AYC	—
—	5	3	Amazing Colossal Man, The	sci AYC	—
—	3	5	And God Created Woman (French)	—	—
—	4	4	Apache Warrior	hist-mel AYC	—
2	10	3	April Love	mus-dr-c AYC	—
—	3	3	As Long As They're Happy (British)	—	—
—	1	2	Assault (Finnish)	com-dr A	—
—	4	10	Baby Face Nelson	cri-dr A	—
—	2	7	Back from the Dead	mys-mel A	—
—	1	5	Badge of Marshall Brennan, The	wes AYC	—
—	1	5	Bed of Grass (Greek)	dr A	—
—	3	2	Bitter Victory (British)	war-mel AY	—
—	3	5	Black Patch, The	wes A	—
—	3	7	Black Scorpion, The	sci-mel AY	—
—	1	2	Blood of Dracula	cri-mel AY	—
—	1	3	Body is a Shell, The	dr A	—
—	10	5	Bombers B-52	war-dr-c AY	—
—	2	5	Bonjour Tristesse	dr A	—
—	2	8	Bop Girl Goes Calypso	mus-com A	—
10	4	1	Bridge on the River Kwai, The	war-dr-c AYC	—
—	6	3	Brothers in Law (British)	com A	—
—	4	2	Cabaret (German)	mus-dr A	—
—	7	5	Cabiria (Italian)	dr A	—
—	10	4	Careless Years, The	soc-dr A	—
—	1	2	Carnival Rock	mus-mel AY	—
—	1	3	Cartouche	adv A	—
—	6	1	Cast a Dark Shadow (British)	cri-mel-c A	—
—	1	5	Cat Girl (British)	cri-mel A	—
—	4	7	Chicago Confidential	mel A	—
1	6	3	Colditz Story, The (British)	mel AYC	—
—	6	6	Constant Husband, The (British)	com A	—
—	—	—			—
—	—	4	Copper Sky	wes AYC	—
—	—	2	Courage of Black Beauty	dr-c AYC	—
—	—	2	Crooked Circle, The	mel AYC	—
—	—	2	Cyclops	sci-mel A	—
—	—	6	Dalton Girls, The	wes A	—
—	—	4	Damn Citizen!	mel A	—
—	—	3	Darby's Rangers	war-mel A	—
—	—	2	Day of the Bad Man	wes-c AY	—
—	—	5	Deadlier Than the Male (French)	dr A	—
—	—	3	Death in Small Doses	mys-mel A	—
—	—	5	Decision at Sundown	wes-c A	—
—	—	6	Deep Six, The	war-dr-c AYC	—
—	—	7	Deerslayer, The	dr-c AYC	—
—	—	5	Devil's Hairpin, The	mel-c A	—
—	—	5	Diamond Safari	mel A	—
—	—	5	Disembodied, The	mel A	—
—	—	6	Domino Kid, The	wes A	—
—	—	12	Don't Go Near the Water	war-com-c A	—
—	—	3	18 and Anxious	dr A	—
—	—	11	Enemy Below, The	war mel-c AYC	—
—	—	5	Enemy from Space (British)	sci AYC	—
—	—	3	Escapade (British)	dr A	—
—	—	8	Escapade in Japan	dr-c AY	—
—	—	4	Escape from Red Rock	wes AYC	—
—	—	3	Escape from San Quentin	mys-mel A	—
—	—	1	Every Second Counts (French)	dr A	—
—	—	2	Farewell to Arms, A	war-dr-c A	—
—	—	5	Fedra, the Devil's Daughter (Spanish)	dr A	—
—	—	3	Female Animal, The	dr A	—
—	—	6	Flesh is Weak, The (British)	soc-dr A	—
—	—	3	Forty Guns	wes A	—
—	—	8	Four Bags Full (French)	war-dr A	—
—	—	2	From Hell It Came	sci-mel A	—
—	—	4	Fuzzy Pink Nightgown, The	mys-mel A	—
—	—	7	Gates of Paris (French)	dr A	—
—	—	3	Gentle Touch, The (British)	dr-c AYC	—
—	—	5	Gervaise (French)	dr A	—
—	—	8	Ghost Diver	mys-mel AYC	—
—	—	3	Girl in Black, A (Greek)	dr A	—
—	—	5	Girl in Black Stockings, The	mys-mel A	—
—	—	7	Girl Most Likely, The	mus-com-c AYC	—
—	—	5	Golden Age of Comedy	doc AYC	—
—	—	4	Golden Virgin, The (British)	mel A	—
—	—	10	Green Eyed Blonde, The	soc-dr A	—
—	—	1	Gun Battle at Monterey	wes A	—
—	—	6	Gun Glory	war-c AYC	—
—	—	2	Guns Don't Argue	cri-mel A	—
—	—	4	Gunsight Ridge	wes AYC	—

A	B	C		A	B	C	
—	4	4	Hard Man, The	—	3	7	Quantez
—	3	8	Hear Me Good	—	—	4	Raiders of Old California
—	6	9	Helen Morgan Story, The	—	6	5	raintree County
—	1	7	Hell Bound	—	1	3	Rape on the Moor (German)
—	6	—	Hell Canyon Outlaws	—	3	5	Razzia (French)
—	1	4	Hell on Devil's Island	—	3	3	Reform School Girl
—	5	2	Hired Gun, The	—	1	4	Return to Warbow
1	8	6	How to Murder a Rich Uncle (British)	—	2	4	Ride a Violent Mile
—	5	11	Hunchback of Notre Dame, The	—	1	8	Ride Out for Revenge
—	2	1	I Was a Teenage Frankenstein	—	5	1	Rock Around the World (British)
—	3	4	I Was a Teenage Werewolf	—	2	10	mus-biog AY
—	9	2	Invisible Boy, The	—	8	1	Rockabilly Baby
—	8	1	It Happened in the Park (French-Italian)	—	3	1	Rodan (Japanese)
—	3	3	It's Great to be Young (British)	—	3	5	Roots, The (Mexican)
—	7	10	Jailhouse Rock	—	6	8	Sad Sack, The
—	1	4	Jamboree	—	1	8	Safecracker, The (British)
—	3	8	James Dean Story, The	—	4	6	Satchmo the Great
—	6	10	Jeanne Eagels	—	2	10	Sayonara
—	6	4	Jet Pilot	—	1	4	Search for Paradise
—	6	4	Johnny Trouble	—	6	2	Seven Hills of Rome, The
—	7	9	Joker is Wild, The	—	3	1	She Played with Fire
—	4	2	Julietta (French)	—	3	5	Short Cut to Hell
—	2	6	Jungle Heat	—	2	10	Silken affair, The (British)
—	3	3	King in New York, A (British)	—	8	3	Sing, Boy, Sing
—	12	7	Kiss Them for Me	—	3	3	Sins of Casanova (Italian)
—	2	8	Lady of Vengeance (British)	—	3	3	Slaughter on Tenth Avenue
—	3	1	Lady Takes a Flyer, The	—	3	3	Slim Carter
3	4	3	Last Bridge, The (Austrian)	—	4	1	Smallest Show on Earth, The (British)
—	3	—	Last Stagecoach West	—	1	4	Smiles of a Summer Night (Swedish)
—	1	2	Lawless Eighties, The	—	6	8	Sorority Girl
1	3	6	Legend of the Lost	—	1	13	Stopover Tokyo
5	9	5	Les Girls	—	7	4	Story of Mankind, The
—	5	5	Light Across the Street, The (French)	—	5	6	Stowaway Girl (British)
—	4	6	Long Haul, The (British)	—	9	7	Street of Sinners
—	—	3	Looking for Danger	—	3	3	Sun Also Rises, The
—	—	9	Love Slaves of the Amazons	—	6	1	Sword for Hire (Japanese)
—	3	5	Lovers' Net (French)	—	1	3	Tall Stranger, The
2	5	2	Man Escaped, A (French)	—	6	10	Taming Sutton's Girl
—	6	6	Man in the Shadow	—	1	4	Tarnished Angels, The
2	13	4	Man of a Thousand Faces	—	1	2	Teenage Doll
—	5	3	Man on the Prowl	—	12	2	Teenage Thunder
—	3	1	Missouri Traveler, The	—	4	8	That Night
—	2	12	Mister Rock and Roll	—	3	6	Three Faces of Eve, The
—	8	1	Monolith Monsters, The	—	3	10	Three Feet in a Bed (French)
—	—	3	Monster from Green Hell, The	—	4	2	3:10 to Yuma, The
—	1	2	Motorcycle Gang	—	2	9	Tijuana Story, The
—	1	3	Mustang	—	3	3	Time Limit
—	2	6	My Gun is Quick	—	3	10	Time without Pity (British)
1	12	5	My Man Godfrey	—	9	1	Tin Star, The
—	1	4	Naked in the Sun	—	6	6	Tip on a Dead Jockey
—	7	7	No Down Payment	—	1	1	Town Like Alice, A (British)
—	—	9	No Time to be Young	—	5	2	Triple Deception (British)
—	6	4	Novel Affair, A (British)	—	5	3	Under Fire
4	12	—	Old Yeller	—	6	1	Undersea Girl
—	6	8	Omar Khayyam	—	7	7	Unholy Wife, The
2	13	2	Operation Madball	—	8	9	Unknown Terror
—	3	1	Ordet (Danish)	—	3	8	Until They Sail
5	13	2	Pajama Game, The	—	1	1	Valerie
3	10	4	Pal Joey	—	3	3	Violators, The
—	7	7	Panama Sal	—	3	1	Virtuous Scoundrel, The (French)
—	3	2	Panic in the Parlor (British)	—	1	5	Walk into Hell
—	1	5	Parson and the Outlaw, The	—	3	—	Wayward Girl, The
—	4	9	Passionate Summer (French)	—	2	5	White Horse Inn, The (German)
1	4	8	Path of Glory	—	2	5	Wild is the Wind
—	1	5	Pawnee	—	2	9	Will Success Spoil Rock
3	11	3	Perri	—	3	3	Hunter?
—	2	4	Persuader, The	—	3	—	Witness for the Prosecution
5	8	2	Peyton Place	—	7	6	Woman in a Dressing Gown (British)
—	5	5	Pickup Alley (British)	—	2	8	Woman of the River (Italian)
—	1	5	Please! Mr. Balzac (French)	—	2	2	World Was His Jury, The
—	5	4	Plunder Road	—	8	2	Young and Dangerous
2	8	4	Portland Exposé	—	4	9	Young Don't Cry, The
—	8	4	Pursuit of the Graf Spee (British)	—	1	13	Zero Hour
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The Consumers' Observation Post

(Continued from page 4)

THE PRESERVATION OF FRESHLY CUT RED MEATS by the use of antibiotics and radiation is being studied. The pre-packaged red meats particularly have been found to offer an ideal medium for rapid growth of spoilage microorganisms. C. F. Niven, Jr., and W. R. Chesbro, in a study for the American Meat Institute Foundation, report that the use of combinations of the tetracycline antibiotics, high-energy radiation, and sorbic acid was effective in delaying microbial spoilage of pre-packaged fresh meats and lengthened their shelf-life. It should be pointed out that from the consumer point of view this cannot be considered desirable since there have been no extensive studies of the biological effect on the human system of meats treated in this fashion. It may well be that discriminating consumers will see the desirability of patronizing the small butcher shop where meat is cut to order, and by-pass the attractively pre-cut and pre-packaged meats offered in supermarkets.

* * *

WARNINGS AGAINST INSTALLING TV SETS in a wall have been issued to servicemen. Television cabinets, it is pointed out by an appliance service magazine, are built to permit adequate air circulation throughout the interior of the set in order to provide the necessary cooling action. Any installation that cuts off air circulation will not only impair operation of the set but may create a heat menace and a possible fire hazard.

* * *

TO MAKE TIRES LAST LONGER when driving on high-speed expressways or an extended trip, keep tire pressure a few pounds higher than normal. That is the recommendation of Edward R. Klamm, accident-prevention director of Allstate Insurance Company, who points out that underinflation causes a tire to flex abnormally and develop too much heat at expressway speeds. He notes that a recent survey completed by Allstate indicates that tire failure has become a major cause of expressway accidents, and motorists with worn tires who have been in the habit of underinflating them in the hope of securing better traction are making a grave error. Automotive News reports that toll-road police find that improper tire care not only increases the likelihood of blowouts but causes more skidding accidents, and dropping the pressure has had the effect of "setting up" a tire for a blowout.

* * *

FROZEN LEMONADE has proved so popular with American housewives that the California lemon producers have been obliged to slash the higher prices of the fresh fruit. By an agreement sanctioned by the federal government in 1941, according to The Wall Street Journal, California growers have restricted weekly shipments of fresh lemons in order "to stabilize" prices. The group responsible for controlling the fresh lemon market is the Lemon Administration Committee, which enforces a compulsory fresh lemon marketing agreement. At the present time, it is estimated that two of every three glasses of lemonade are made from the cheaper frozen concentrate. Furthermore, growers in Italy have discovered that squeezing lemons produces a profitable item for shipment to the United States. California growers are currently faced with the problem of real competition, and the price of fresh lemons is coming down.

* * *

LIST PRICES don't mean a thing any more. The National Better Business Bureau is campaigning vigorously against inaccurate comparative prices and pre-ticketing policies, particularly on household appliances. As one shrewd observer in New York City pointed out, it is always wise to find out what Macy's is selling an appliance for before you come to the conclusion that you are getting a bargain from a discount house.

MOST AMERICAN CONSUMERS LIKE TO DICKER. The instinctive desire for a horse trade has shifted to the field of appliances, television and radio sets in the discount house. At any rate, that is the view of George Kistler who runs an appliance store in downtown Topeka, Kansas, and a discount house on the outskirts. Mr. Kistler sets prices in his bargain outlet on a 15 percent markup over dealer's car-load-price and sells an appliance in the crate. His customers can dicker for delivery, installation, tube warranty, and service if they want these items. One attraction of his discount house is a trade-in allowance on the customer's old appliance. At his downtown store, Mr. Kistler offers home demonstration, delivery, installation, service guarantee, and trade-in as well. At his discount house there is no free home demonstration, no free delivery, or service guarantee. There is one thing to be said for this setup: it offers the consumer an opportunity to compare prices and decide just how much the various extras are worth to him.

* * *

MANY MORE FOODS will carry a list of their ingredients on the label within the next year. The Food and Drug Administration points out that various products for which standards have not been established, including certain canned packs of fruits, berries, and vegetables, canned clams, and shrimp, malted milk, olives in brine, and sauerkraut, are no longer exempted from the labeling requirements of the 1938 Food, Drug, and Cosmetic Act. The Food and Drug Administration is continuing exemptions for three classes of food: frozen desserts, nonalcoholic carbonated beverages, and vanilla extract—on all of which work in developing standards is in process.

* * *

WARNINGS AGAINST INDISCRIMINATE use of penicillin continue to make their appearance. The New England Journal of Medicine reports one case of acute anaphylactic shock due to oral intake of penicillin by a man who was suffering from a sore throat and decided to try one of his wife's penicillin lozenges, purchased without a prescription. In less than two minutes after he had placed a tablet into his mouth he collapsed onto a sofa in a comatose condition. Only the prompt arrival of the family physician and application of emergency remedial measures saved his life.

* * *

AN ELECTRIC STOVE SHOULD BE SO DESIGNED that a small electric bulb that sells for 20 cents can be replaced on the control panel without a major job of disassembly. That was the conclusion reached by an irate consumer who paid a service charge of \$7.50 to have a new bulb installed. To add insult to injury, the instruction book that came with the range gave directions for the do-it-yourself owner to make his own replacement, but, as it turned out, the instructions applied to another model.

* * *

CAMERA CLUB MEMBERS and students taking courses in photography that are so popular in many sections of the country in adult evening classes at this time of year will find very useful a little book entitled "Better Pictures: How to Get the Most Out of Your Camera." This is a low-priced newsstand edition of "Taking It Easy With Your Camera," by Joseph C. Keeley, now available in pocket size (50 cents plus 5 cents postage from Dell Publishing Co., 10 W. 33 St., New York 1). It is particularly effective for amateurs because of its non-technical presentation and its awareness of the fact that it is possible to get a good picture with a simple, inexpensive camera if technique and know-how are acquired by study and attention to details; above all, by learning just what a camera's capacity is and how to get the best use out of it. Even those who are not taking courses in photography will find the book very helpful. A mimeographed outline of a course based on the book as offered at Stuyvesant Adult Center, New York City, is available at 20 cents from Consumers' Research, Inc., Washington, N.J.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Bach: *Art of the Fugue*. Helmut Walcha (organ). 4 sides, Archive ARC 3082/3. \$9.96. While composing this monumental work for which he did not indicate the instrumentation, Bach died. Walcha plays it skillfully on a large organ, with a minimum of dynamic contrast, relying on form. Instrumentation is clear and there is little reverberation. **AA AA**

Beethoven: *Symphony No. 5*. Philharmonic Symphony of London under Rodzinski. Westminster W-Lab 7058. \$7.50. Popular masterpiece available on more than 20 LP's. Toscanini on Victor LM 1757 (\$3.98) with Beethoven's *Symphony No. 8* overside is the most thrilling performance, but the recording is thin. Rodzinski conducts with less drama, more classicism. Very well recorded, but is his disk worth the difference in price? Kleiber on London LL 912 may be a suitable compromise. For the budget-conscious, the new Vanguard SRV 106 (\$1.98) offers a good performance of Beethoven's *No. 5* and Schubert's *No. 8*, satisfactorily recorded at a comparatively low volume level. **A AA**

Chopin: *Impromptu No. 1*, *Nocturne Op. 27 No. 2*, *Fantaisie Impromptu* & **Liszt:** *Faust Waltz* and *Three Sonnets*. Louis Kentner (piano). Capitol P 8400. \$3.98. Unusually expert and sensitive playing of romantic piano music. Excellent recording. **AA AA**

Delibes: *Coppélia*. L'Orchestre de la Suisse Romande under Ansermet. 4 sides, London LL 1717/8. \$7.96. Lovely, remarkable ballet score performed with imagination and polish. Best recording of this work. **AA AA**

Elgar: *Falstaff* and *Cockaigne Overture*. Philharmonic Promenade Orchestra under Boult. Westminster XWN 18526. \$3.98. Some critics regard *Falstaff* as Elgar's masterpiece. Sir Adrian is clearly in his element. It is difficult to imagine a better performance. Very well recorded. **AA AA**

Karlovicz: *Violin Concerto in A*. Galina Barinova (violin) with the State Symphony Orchestra of the U.S.S.R. under Kondrashin & **Matchavariani:** *Violin Concerto*. Mikhail Vaiman with the same orchestra under Dmitriadi. Westminster XWN 18535. \$3.98. The concerto which Karlovicz composed in 1902 sounds like something you've heard before (Bruch, perhaps), though the tunes are new. The Matchavariani dates from 1950 and sounds a bit more contemporary. Barinova is stated to be Russia's foremost woman violinist, but she plays less brilliantly than the 31-year-old Russian male whose playing is recorded overside. Acceptable recording. Not a great record, but those who like violin concertos may find it a pleasing novelty. **A A**

Mozart: *Sinfonia Concertante* & **Benjamin:** *Romantic Fantasy*. Heifetz (violin), Primrose (viola), with a Symphony Orchestra under Solomon. RCA Victor LM 2149. \$3.98. The Mozart work, a concerto masterpiece if there ever was one, is played in the polished manner of Heifetz's violin playing. He, obviously, has taken command. The melodic, sensuous work overside is no masterpiece, though it is an engaging filler by a contemporary composer. What is heard of the orchestra, which plays discreetly, is good. **AA AA**

Puccini: *Tosca*. Milanov, Bjoerling, Warren, etc., under Leinsdorf. 4 sides, RCA Victor LM 6052. \$8.96. Gory, passionate opera that demands an exciting dramatic soprano. Milanov makes less of Vissi than expected, though she is consistently good, and loud. Bjoerling is in robust voice, but he is best in the lyric parts. Warren sounds too much like his superb Rigoletto to make one lose oneself in Scarpia, but he is the most subtle of the principals. . . . Callas and Sabata on well-recorded Angel 3508B are not shaken from their pedestal, though in some respects the singing is less polished. **A AA**

Saint-Saëns: *Symphony No. 3*. Philadelphia Orchestra with E. P. Biggs under Ormandy. Columbia ML 5212.

\$3.98. Masterful playing superbly recorded. This is probably the best instrumental work Saint-Saëns composed—brilliant, melodic, Mendelssohnian. **AA AA**

Tchaikovsky: *Eugen Onegin*. Vishnevskaya, Belov, Lemeshev, members of the Bolshoi Theater under Khaikin. 6 sides, Westminster OPW 1303. \$14.94. The Met opened the season 1957-1958 with this opera, though it was sung in English. The press approved the Met's part in the proceedings, but called the opera dull. The Bolshoi cast is quite satisfactory, yet there are no great voices. The principals in the roles of Tatiana, Onegin, and Lensky compare favorably with the Met's cast on opening night. The ensemble is good, the direction appropriate, and the fidelity acceptable. **A A**

Turina: *Canto a Sevilla*. De Los Angeles (soprano) with the London Symphony under Fistoulari. Angel 35440. \$4.98. Charming Spanish suite in which the superb singing of De Los Angeles is heard in four parts, the orchestra alone in three parts. Richly recorded. **AA AA**

Wieniawski: *Concerto No. 2* & **Saint-Saëns:** *Introduction and Rondo Capriccioso* & **Ravel:** *Tzigane*. Isaac Stern (violin) with the Philadelphia Orchestra under Ormandy. Columbia ML 5208. \$3.98. Staples in the concert repertory played with fat tone and impeccable technique. The Saint-Saëns is particularly expressive. "Over elaborate artistry" in the Ravel sometimes gets in the way of the music's flow. But on the whole, a fine performance. Excellent rapport with the superb orchestra. **A AA**

Erich Kunz Sings German University Songs Vol. 2 (baritone). Vanguard VRS 1010. \$4.98. Described as 21 songs of "wooing, wit and wanderlust." Most of them date from the early 19th century. Kunz sings them beautifully. There's also a male chorus and the orchestra of the Vienna State Opera under Paulik. It's all very well done, including the engineering. **AA AA**

David and Igor Oistrakh (violins). Decca DL 9950. \$3.98. Father and son are featured in Bach's famous concerto for two violins, Vivaldi's *Concerto Grosso in A Minor*, and two other works by Tartini and Bach. The repertoire for two violins is not often heard, so the disk is the more welcome. Some of the playing sounds stiff and formal and unexciting, but in most respects it is as good as you'd expect of these superior violinists. Satisfactory work by the Gewandhaus Orchestra. Acceptably recorded. **A A**

Original Arrangements of Jimmie Lunceford in HI-FI. Sy Oliver and His Orchestra. Decca DL 8636. \$3.98. Though the arrangements are 20 years old, this disk was the high spot in one evening's light music listening. The band has style and anyone who likes a straightforward, rhythmic approach with some subtle instrumentation is likely to find the disk better than most of this kind: "For Dancers Only," "Margie," "Dream of You," "My Blue Heaven," etc. **AA AA**

Overtures—in Spades! New Symphony Orchestra under Agoult. RCA Victor LM 2134. \$3.98. Despite the title, it's a good collection of light pieces—the overtures from "Light Cavalry," "Zampa," "Queen of Spades," and three others seldom heard. The emphasis is on forceful, rousing, dramatic playing. The music can take it. Wide-range recording. **AA AA**

Rossini Overtures. Minneapolis Symphony under Dorati. Mercury MG 50139. \$3.98. Six sparkling overtures nearly everybody enjoys. There's surprising virtuosity and excitement in the playing, and the bright recording fits the music. The orchestra sounds smaller than symphonic size, which probably accounts for the clarity. **AA AA**

● OFF THE EDITOR'S CHEST

Don't fall for the latest thing in garden miracles

THE COLORFUL and alluring pictures of spring shrubs, summer flowers, and vegetables in seed and plant catalogs make their appearance in the gardener's mailbox almost before the Christmas greens are taken down. During the cold and wintry weather, it is pleasant to contemplate the new varieties of iris, delphiniums, dahlias, and mums, or drool over the pictures of fat red tomatoes and other vegetables that can be grown from a small investment in seeds. At this stage the hard work of digging, planting, hoeing, weeding, spraying, and all the other energy-consuming, back-breaking, callus-forming aspects of gardening are forgotten. The rosy glow of optimistic expectation engendered by the seed catalogs too often carries over to the early months of spring, when mail-order advertisements, pitchmen on the radio, and itinerant salesmen endeavor to take their toll from the home gardener's pocketbook.

Now every intelligent gardener knows, if he stops to think, that there is really no magical chemical, fertilizer, or spray that will make his flowers, vegetables, lawn, and shrubs "burst forth into healthy, luxurious bloom or growth" and thrive free of bugs, blights, and weeds when applied in some easy fashion. Yet each year finds a new crop of trusting souls who invest from \$2.98 up to sizable sums for the latest thing in garden miracles. It saves money and disappointment to keep in mind that, if there are new developments in fertilizer, weed control, pest elimination, and soil conditioning, the U. S. Department of Agriculture will know about them; State Experiment Stations, too, are usually well informed on such matters. Just a postcard to such sources of information will as a rule bring helpful advice.

As for the mail-order plant and flowering shrub advertisements, some, of course, are placed by reputable, established companies. Others are sponsored by shrewd merchandisers who get their supplies on a job lot basis and are primarily salesmen rather than nurserymen. The Better Business Bureaus in various parts of the country have been active for many years in exposing misleading advertising of horticultural products. One of the most persistent offenders has been the Holland Bulb Company of Grand Rapids, Michigan, which was the subject of Federal Trade Commission action last fall for falsely advertising nursery stock as: "42 gorgeous rose plants, flowering shrubs and hedge plants. All a \$26.77 catalog value, special \$2.98. . ." The F. T. C. examiner pointed out

that among other things, many of the plants in this offer were small, immature, dead, not well-branched or well-rooted, and unlikely to survive in the average garden.

Grades for nursery stock have been set up by the American Association of Nurserymen, Inc., and consumers will do well to get in writing a specific statement of the quality of the particular stock that they are purchasing, in terms of the Association's grades.

Don't be impressed by the claim that something has been tested and approved by the U. S. government or the U. S. Department of Agriculture, or some other government bureau until you have checked with the bureau in question. In August 1957, the U. S. Department of Agriculture was obliged to issue an official statement pointing out that its turf specialists had never tested the product called *Green Plasma*, contrary to claims made in advertisements that had appeared in a number of newspapers in various parts of the United States. The advertisements also claimed that by sprinkling a small amount of the product on the lawn the user would never have to worry about a burned-out lawn or have to spend time, energy, and money on "fast-greening fertilizers and plant foods." On this point, the D. of A. noted that its scientists still recommend adequate water plus lime and proper fertilizers as essential in maintaining or improving the quality of a lawn.

The St. Louis Better Business Bureau perennially warns homeowners to be aware of phony tree surgeons and sellers of fake humus or lawn dressings, who take advantage of the pleasant spring weather to ply their trades. Sawdust colored brown has brought a high price as cow manure. On any soil conditioner, of which a considerable amount will be needed, one should first check as to type and composition with a State Experiment Station specialist. Even if it is not a fraudulent product, ridiculously overpriced, it may not be effective for your particular lawn or garden.

Although power equipment, such as garden tractors and power lawn mowers, lighten the load, there is a certain amount of sweat and toil required in the care and maintenance of lawns and shrubs and the raising of colorful flowers and prize-winning vegetables. Some would not have it otherwise. If you are inclined to believe in abracadabra and magical formulas, take up some other hobby—you are probably just not born with a green thumb.

ARSENIC,

a known cancer-causing agent in cigarettes

THERE IS ARSENIC in most of the cigarettes smoked to the number of four hundred billions each year by about 50 millions of American smokers. The tobacco in nine leading American brands of cigarettes tested recently was found to contain 5 to 23 parts per million of arsenic.

Everyone knows that arsenic is poisonous; it is a favorite lethal agent for the skulking, scheming murderers in crime fiction. Devotees of murder mystery novels know also that arsenic has a *cumulative* effect. Repeated doses add up. Illness or death can come after an extended period of exposures to quantities so small that any one of them alone would not have a noticeable effect. Arsenic, unlike some poisons, is not promptly excreted without lasting effect, but is deposited in the body, especially in the kidneys, liver, intestinal walls, skin, spleen, lungs, hair, and bones. It can be transmitted to an infant through the placental circulation or through the mother's milk.

Arsenic is the only material thus far found in cigarettes which is *known* to be capable of inducing cancer in human beings. Other chemicals from cigarettes, notably benzpyrene, are carcinogenic (cancer-inducing) for some animals, and are strongly suspected, with good reason, of having this property for man also—but arsenic is known certainly, on the basis of much clinical evidence running to hundreds of cases, to be a cause or a co-cause of cancer in men. As with X-rays and other ionizing radiations, the cancerous growths triggered by exposure to arsenic may sometimes appear after a delay of many years.

Of the arsenic present in the smoked portion of a cigarette, about one eighth is drawn into the smoker's body, according to the results of research reported by two scientists of the U. S. Department of Agriculture. This means that a heavy smoker—consuming two packs a day—of some American cigarettes may well be taking into his mouth and lungs about 90 micrograms (nearly one tenth of a milligram) of arsenic daily. While medication with an arsenical compound was once very common (Fowler's solution), inorganic arsenic preparations are no longer official in the U.S. Pharmacopeia. Medical men nowadays make only very limited use of arsenic, and only in a very few highly dangerous diseases where the risk of injury seems to be worth taking are arsenical medications used, for a limited period and under close professional observation and supervision. According to the work of M. Daff and E. L. Kennaway in England, a person who smokes 50 cigarettes with a mean arsenic content of 50 micrograms has volatilized as much as one fourth the amount contained in a minimum "official dose" of Fowler's solution.

The size of a single dose of arsenic that will kill a human being is fairly well known. The amount that can be tolerated in a series of small doses without producing the classic symptoms of "chronic" arsenic poisoning is less well established, but poisoning has occurred with as little as 2 to 4 milligrams (2 milligrams is about 1/250,000 pound) of arsenic daily for a year or two, and as

(Continued on page 31)





**New models
often are not
so new
as they're
cracked up
to be**

Changes in body designs of automobiles appear every year at least, so that superficially the cars are new; the changes, as most people now know, are mainly for appearance and sales appeal, and to reduce the resale value of used cars. Normally, these changes do not affect the performance or use-value of the car. A good many consumers, not unnaturally, suppose that everything else which calls itself a new model is really new and different in essentials, as well as in details of its appearance or "features" added for sales appeal.

Trade journals in the appliance field are quite frank about the need for change just for the sake of change, and often suggest that manufacturers should make more frequent superficial and appearance changes to speed up obsolescence, in order that consumers will have a reason for buying a "new model" of something they already have that is working well, and serving every need.

It is common practice for manufacturers to change the model number of an appliance each year even though the actual changes may be limited to the addition of new chromium strips or ornaments, or the shape or position of a knob or two or substitution of push buttons for knobs, or vice versa.

It is fortunate for consumers, indeed, that really basic changes are *not* made too often, for overfrequent change usually means service and other difficulties with the new model because of unanticipated faults and defects that develop in day-to-day operation in the home. Unexpected and unpredictable defects arise in almost every complex appliance, regardless of its make. If the design is new and unusual in some respect or in several, the consumer can expect such defects to be more frequent, more troublesome, more costly to repair.

From the consumer's standpoint, the best washer, dishwasher, or vacuum cleaner is very often *not* the *newest* one with novel features and sales appeal; it may be one that has been on the market in its present form for several years, or at least long enough that the maker has caught and corrected all the "bugs" in his design and production, and has been able to inform his service agencies on how to correct troubles, and has supplied them with the spare parts, diagrams, and instruction sheets which experience has shown will be needed. For a very new appliance (or auto) such data are very often not available to the serviceman, and his work will be less efficient and more costly on that account.

CONSUMER BULLETIN